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**REPORT ON THE 1991
INDUSTRIAL DIRECT DISCHARGES
IN ONTARIO**

**Volume 1 - Summary Of Compliance
Assessment**

SEPTEMBER 1993



**Ministry of
Environment
and Energy**

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**REPORT ON THE 1991 INDUSTRIAL DIRECT
DISCHARGES IN ONTARIO**

Summary of Compliance Assessment

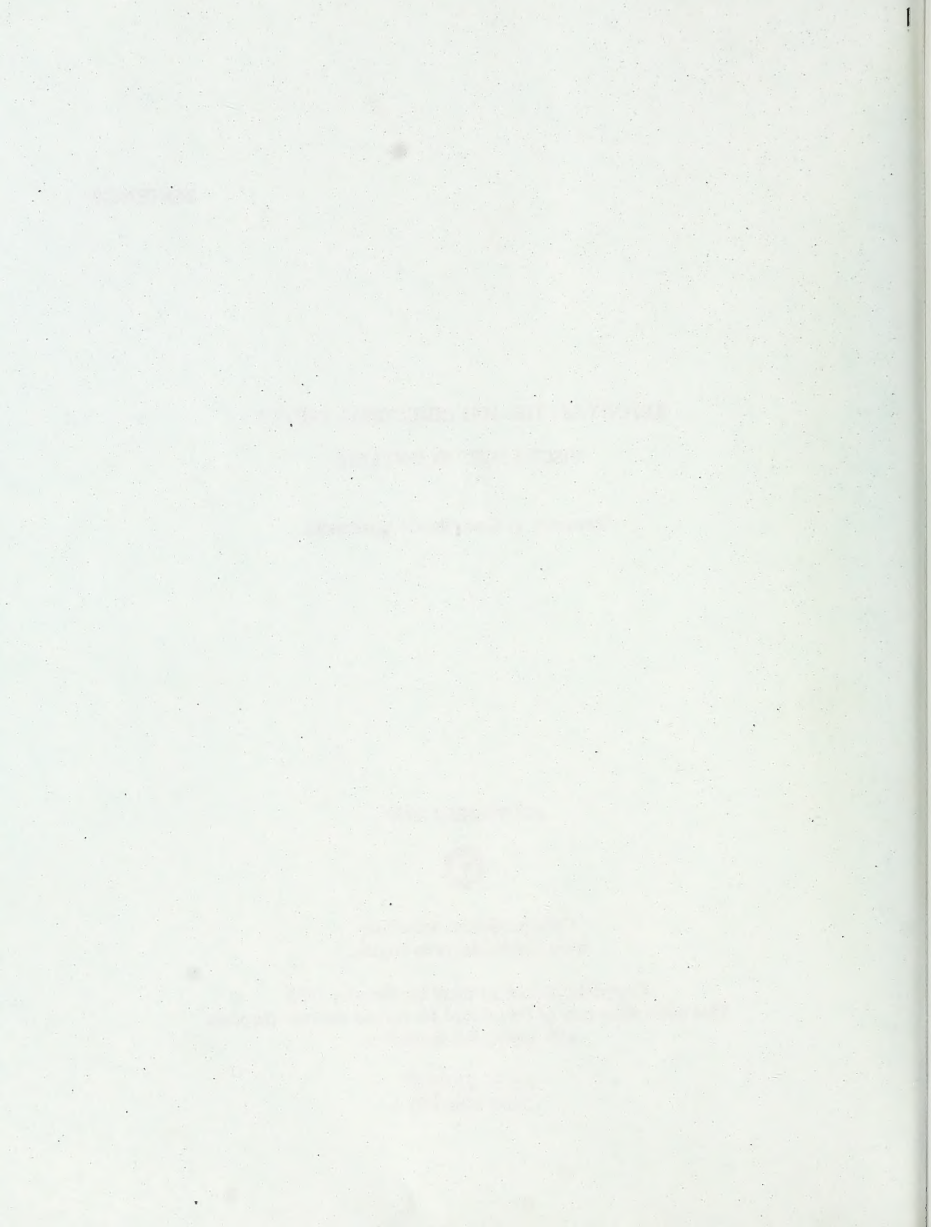
SEPTEMBER 1993



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REPORT ON THE 1991 INDUSTRIAL DIRECT

DISCHARGES IN ONTARIO

Summary of Compliance Assessment

Report prepared by:

Water Resources Branch
in cooperation with
Regional Operations Division
Ontario Ministry of Environment and Energy

CONSTITUTION OF THE UNITED STATES

ARTICLE I

Section 1

Section 2

Section 3

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Section 5

Abstract

The annual Industrial Direct Discharge Report is a comprehensive summary of industry's performance in controlling the quality of direct discharges into Ontario's waterways. The report details compliance with effluent requirements.

The report consists of two volumes. Volume I is a summary of compliance assessment and the report findings; Volume II contains individual discharger data and several referenced appendices. Appendix A in Volume II forms the bulk of the report and contains information on the name and location of the discharger, the characteristics of the waste effluent, a brief description of treatment equipment and systems, and the receiving water body. Also listed in Appendix A are: the external effluent treatment systems, the effluent limits prior to discharge, the status of compliance with those limits, and any comments that may be relevant to describe the discharge or discharger.

Self-monitoring data provided by each industry includes monthly average flows, and monthly average loadings of the limited parameters. Conventional parameters continue to be the emphasis of this document and the results of acute lethality testing using rainbow trout and Daphnia magna are included.

Compliance with site-specific requirements in 1991 improved marginally.

Information relating to industrial spills and municipal sewage treatment plants (STP) discharges are reported under separate cover. Volume II is available in a diskette format as well as in hard copy. For questions relating to this report please contact: Senior Manager, MISA Office, Water Resources Branch, 40 St. Clair Ave. West, Toronto (416) 314-3931.

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UNIT 10: THE ENVIRONMENT

1. INTRODUCTION

- 1.1. The environment is the natural world around us.
- 1.2. It includes the air, water, land, and living organisms.

2. THE ENVIRONMENT AND HUMAN ACTIVITY

- 2.1. Human activity has a significant impact on the environment.
- 2.2. Deforestation is the removal of trees and forests.
- 2.3. Pollution is the contamination of the environment by harmful substances.
- 2.4. Climate change is the long-term change in the Earth's climate.
- 2.5. Global warming is the increase in the average temperature of the Earth's surface.
- 2.6. Air pollution is the presence of harmful substances in the air.
- 2.7. Water pollution is the contamination of water bodies.
- 2.8. Land pollution is the contamination of the land.

3. THE ENVIRONMENT AND DEVELOPMENT

- 3.1. Development is the process of improving the quality of life.
- 3.2. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

4. ENVIRONMENTAL PROTECTION AND POLICY

- 4.1. Environmental protection is the conservation of the environment.
- 4.2. Environmental policy is a set of principles and guidelines that guide the government's actions.

5. ENVIRONMENTAL PROTECTION AND HUMAN RIGHTS

- 5.1. Environmental protection is a human right.
- 5.2. The right to a healthy environment is a fundamental human right.

6. DATA MANAGEMENT SYSTEMS

- 6.1. Data management systems are used to collect, store, and analyze data.
- 6.2. They help in making informed decisions.

7. CONCLUSION

- 7.1. The environment is a precious resource that we must protect.
- 7.2. We must take action to prevent environmental degradation.

8. REFERENCES

- 8.1. United Nations Development Programme (UNDP).
- 8.2. World Bank.

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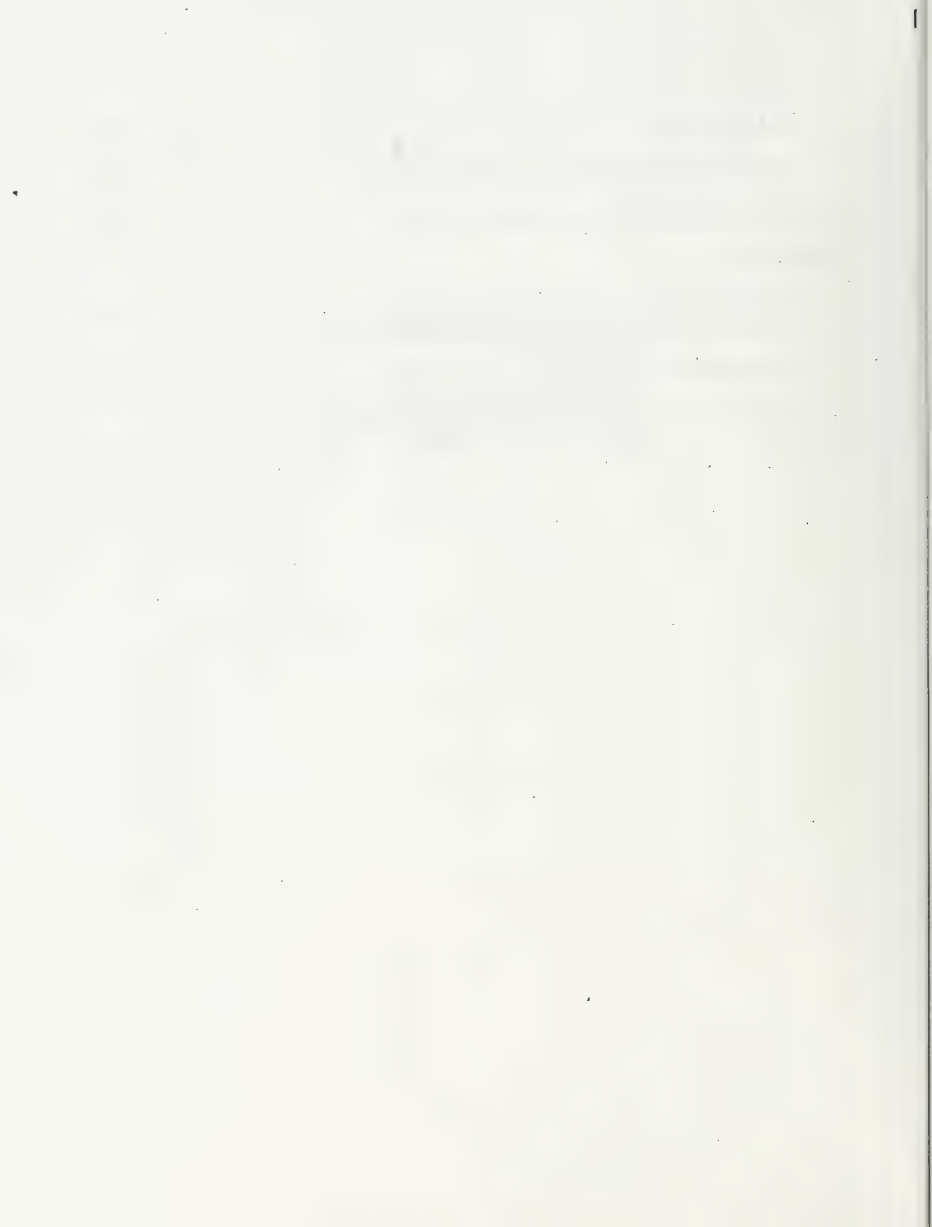
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EXECUTIVE SUMMARY

The annual Industrial Direct Discharge Report is a comprehensive summary of industry's performance in controlling effluent quality in Ontario for the year 1991. The report details compliance with effluent requirements. Compliance with site-specific requirements in 1991 improved marginally.

In this report, an industrial direct discharger is designated as being out of compliance if its effluent concentration or discharge loadings exceed one or more of the parameters in the effluent requirements. If there is any exceedance, even minor, the discharger is deemed to be out of compliance.

The word "compliance" as used in this report does not indicate that no contraventions of the legislation and regulations have occurred, but rather that the data recorded in the report do not, in themselves, demonstrate that there have been contraventions. Dischargers may be in compliance with the data contained in this report, however they may be in violation of the Environmental Protection Act for causing other adverse effects to the environment, such as spills which may have bypassed the sample location. Information on spills are contained in the Spills Action Centre Summary Report, published annually under separate cover. Information on companies that have been convicted can be found in the Convictions Report.

This report is not an assessment of impacts of industrial discharges on the environment. It is an assessment report on the performance of the dischargers against the limits/guidelines they are required to meet.

The report consists of two volumes. Volume I is a summary of compliance assessment while Volume II contains individual discharger data and several referenced appendices.

This report is based on self-monitoring data provided by industry and conventional effluent parameters continue to be the emphasis of this document. The legal monitoring requirements under the Municipal Industrial Strategy for Abatement (MISA) for the four last sectors -- Metal Mining, Metal Casting, Electric Power Generation and Industrial Minerals were completed in January, April, May and July respectively of 1991.

Of the one hundred and sixty-nine (169) industries assessed in this year's report, eighty-four (84) were in compliance for all measured effluents for the full year. Eighty-five (85) dischargers were not in compliance. In response, twenty-two (22) made physical changes to their treatment systems while another forty-five (45) implemented best management operational procedures to achieve compliance. Five (5) non-complying companies ceased operations

for economic reasons. The remaining thirteen (13) require further action to be in compliance or had one-time exceedances and no action was taken.

This year's report includes the results of acute lethality testing using rainbow trout and Daphnia magna. Some tests were made as a requirement under the MISA effluent monitoring regulations, while most were made as part of the Ministry's audit program.

The Ministry also publishes under separate cover a report on performance information on municipal Sewage Treatment Plants.

1.0

INTRODUCTION

1.1

History of Discharge Reporting

This annual report summarizes the performance of industrial plants that discharge effluents directly into the surface waters of Ontario. The annual reports were started in 1978 to meet the requirements of Article VI 1(c) of the Great Lakes Water Quality Agreement between Canada and the United States, and they have evolved over time in response to changes in the Agreement, as well as to demands from the public. Originally only annual averages were reported; now monthly averages are reported as well. The report now includes industrial direct dischargers in all of Ontario, not only those discharging into the Great Lakes.

Dischargers are required by the Ministry of Environment and Energy (MOEE) to self monitor their effluent quality and report the results. Effluent quality is judged by comparing reported values against numerical limits. The numerical limits for the parameters may be either a guideline (provincial or federal) or legal requirement (control order, certificate of approval, requirement and direction, federal regulation).

To report on compliance in a timely manner, it is proposed to change the format of future direct discharge reports starting with the performance data for the year 1992. The new format will focus on the discharger's compliance with legal limits and policy objectives for effluents. Effluent information for individual direct dischargers will be available from any of the ministry's offices in the Regional Operations Division (Appendix D).

1.2

How to Use this Report

To find information about the direct discharger of interest start with Appendix A, Volume I, where companies are listed alphabetically. Appendix A also indicates whether the discharger's effluent loadings met the ministry's assessment criteria. If the company was in non-compliance for the year 1991, the exceedance and the abatement action taken by that firm are listed in Appendix B, Volume I. If the effluent exceedance violated a legal limit, an occurrence report was filed; which resulted in an evaluation and/or investigation of the exceedance. The investigation may result in charges being laid.

Volume I contains the summary and overview of the compliance performance of 169 direct dischargers for the year 1991. All effluent requirements must be met at all times throughout the year for a discharger to be in compliance. Appendices A, B and C in Volume I summarize compliance, abatement and enforcement actions respectively. The three year compliance performance for each discharger is summarized in Appendix A. Actions taken to address 1991 non-compliance are in Appendix B. Appendix C provides a list of actions taken by the Ministry in response to an occurrence report of a violation of a legal requirement.

Volume II contains appendices showing more detailed data. The actual monthly and annual average pollutant loadings and flows, as well as effluent requirements are shown for each source in Volume II, Appendix A. The wastewater discharge summary sheets are arranged in alphabetical order by company name. The summary for each discharge source identifies the owner of the plant site and its location, describes the nature of the plant operation and the associated effluent quality in terms of conventional pollutants and toxicity test results. Conventional pollutants are suspended solids, dissolved solids, biochemical oxygen demand, chemical oxygen demand, solvent extractables, phosphorus, ammonia-nitrogen, Kjeldahl nitrogen, nitrites and nitrates, dissolved solids, and phenols. There may be other site-specific parameters such as arsenic, cyanide, copper, lead, zinc, nickel, radium 226, iron, and temperature. Effluent treatment systems external to the plant are also described. In setting effluent requirements the ministry chooses control parameters that are typical indicator pollutants for that particular industrial operation. Any exceedances of the requirements are noted and an explanation is provided. The results of the acute lethality tests are reported in the summary for individual dischargers.

Both volumes of this report are available from the MOEE Public Information Office, 135 St. Clair Avenue West, Toronto, Ontario, M4V 1P5, telephone (416) 323-4321 and Ministry field offices (Appendix D).

2.0

EFFLUENT REQUIREMENTS

2.1

Net and Gross Data Reporting

The wastewater discharge summaries in Volume II, Appendix A, show total site (plant) loadings as well as individual pipe discharges. Unless stated otherwise, the loadings reported are 'gross' values. In reports prior to 1989, pollutant loadings were identified as either gross or net values and the majority of the loadings were reported as gross. Where the effluent loading had been adjusted for pollutants in the intake water, the loading was a 'net' value and this applied to about 10% of the dischargers.

Although in theory net loadings can be calculated, there are practical difficulties in quantifying the impact of intake contaminants on the final plant discharges. For example, consider the conventional parameter suspended solids, almost all plants remove intake solids – silt, clays and other debris

– before using the fresh water. However, the solids discharged may be of a different nature than those originally present in the intake water as the result of use and/or treatment. These factors, and others, make calculations of final effluent quality in relation to intake water quality highly questionable.

For some dischargers, the conversion to reporting gross loadings may result in an apparent increase in the loading numbers compared to those reported in previous years. However, these reported increases do not necessarily mean that there was an actual increase in the effluent loadings being discharged, but rather a reported increase due to a change in the loading calculation. Where this change has occurred, the data reported for 1990 and 1991 cannot be compared to that of previous years. The changes are shown on the discharge summary sheet.

2.2

Effluent Limits

The Ontario Ministry of Environment and Energy presently sets effluent limits on a site-specific basis. A variety of measures are used by the province to apply these limits, including voluntary programs or guidelines, control orders, certificates of approval and other MOEE requirements and directions. The MISA limits regulations will set legally enforceable limits for each of the discharges in nine industrial sectors.

The implementation of pollution control is a cooperative federal/provincial endeavour. Ontario has agreed, under the Canada-Ontario Accord for the Protection and Enhancement of Environmental Quality, to adopt provincial pollution control requirements which are at least as stringent as the national objectives. Federal guidelines apply to some existing plants, while federal

regulations prescribe limits for some new and expanded plants. The federal regulation for chlor-alkali plants is the only regulation that applies to both existing and new facilities. Few federal regulations apply to Ontario plants. Refer to Volume II, Appendix F for a list of federal regulations and guidelines.

2.3

Legal Requirements

Legally enforceable control orders under Section 7 of The Environmental Protection Act, which define abatement actions with compliance dates, may be issued to any existing plant. Legally enforceable requirements and directions may also be issued under Section 91 of The Ontario Water Resources Act. Both may be appealed and during the appeal period, the requirements in question do not apply if a stay is granted. Since appeals may take a long time and no effluent improvement will occur in the appeal period, a consensus is often reached by the discharger and the ministry before the control document is issued in order to achieve immediate effluent improvement.

For several sources there are federal limits in place, through regulations under The Fisheries Act. (See Appendices F-6, F-7 and F-10 in Volume II)

A certificate of approval for wastewater treatment works is issued under The Ontario Water Resources Act. Many existing certificates approve the installation of effluent treatment systems but do not set effluent limits nor monitoring or reporting requirements. New certificates, as will control orders, set effluent limits and usually include monitoring and reporting requirements. These conditions are appealable as well.

2.4

Site-Specific Requirements

Before any site-specific effluent requirements are set, Ministry staff review the impact of the effluent based upon the assimilative capacity of the receiving water. This water quality approach is embodied in a policy booklet, "Water Management: Goals, Policies, Objectives and Implementation Procedures of the Ministry of the Environment", revised May 1984. For contaminants which are not considered to be persistent toxic contaminants, every river or lake has a definable assimilative (self-purification) capacity. Water quality considerations take precedence when degradable discharges exceed the assimilative capacity of the receiving waters, even though the discharged loadings are within the limits set by federal guidelines or regulations. In these cases, more stringent requirements based on the receiver's limited assimilative capacity are used to set effluent loading limits. For example, a biochemical oxygen demand loading limit may be set to meet the provincial water quality

objective for dissolved oxygen in the receiving water provided that it is more stringent than any federal requirement. If the discharge from a site met Ontario's Provincial Water Quality Objectives for a specific contaminant and there are no federal rules, then the provincial concentration guidelines, "Objectives for the Control of Industrial Waste Discharges in Ontario", 1966, are used to set effluent requirements.

2.5 Industrial Guideline Requirements

The 'concentration' approach was incorporated into provincial guidelines, initially on the basis of experience with municipal sewage treatment systems. It was presumed that where industry used the same effluent treatment technology as the municipalities, both effluents should have the same pollutant concentration limits. However, many industrial wastewater effluents have different characteristics than municipal wastewaters, and the use of similar effluent treatment systems does not produce similar pollutant concentrations. Other guidelines were developed for specific industrial sectors and are based on the state of treatment technology for that sector at the time of writing. A number of guidelines are used to assess acceptable effluent quality for the majority of industrial discharges. (See Appendices F-3, F-4, F-5, F-10 and F-11 of Volume II).

Many plants now have limits set on a loading basis, e.g., kilograms discharged per day, rather than on an effluent concentration basis. This recognizes that it is the loadings to the environment rather than concentrations that are important. Where the pollutant concentration is high but the effluent volume is small, the loading is small; if the receiving surface water body is large as well, the environmental impact may be further diminished.

2.6 MISA Program

The objective of the MISA program is the virtual elimination of persistent toxics from Ontario's waterways. The MISA program consists of two phases - data collection followed by the development of limit regulations. By mid 1991 all nine industrial sectors had submitted twelve months of effluent monitoring data as required by the regulations. The second phase, the development of limit regulations was underway in all sectors.

For each industrial sector consultants were hired to report on the best available technology. The consultants were given two objectives:

- to evaluate the current status of treatment technology at each Ontario plant
- to identify the performance and cost of best available technology worldwide for each sector and to indicate pollution prevention technology.

The consultant reports together with MISA monitoring data are being used to develop limit regulations, according to procedures stated in the Ministry's policy document, "MISA Issue Resolution Process Final Report Summary", September 1991. To ensure that the regulations are technically sound, the MISA program includes consultation with interested and affected parties through the Joint Technical Committees (JTC). The JTC for each industrial sector consists of representatives from the Ministry of Environment and Energy, Environment Canada and the affected dischargers.

The proposed Effluent Limits Regulations for the Petroleum Refineries and the Pulp and Paper Industry were released for public review in August 1992 and February 1993 respectively.

2.7

Toxicity

The Ontario Ministry of the Environment and Energy utilizes the fish toxicity test to identify industrial discharges which are acutely lethal to aquatic organisms and to assess the potential impact of complex effluents on the aquatic environment. The tests have been designed to answer whether or not an effluent produces an effect on a biological system and to quantify the measured effect. The results of toxicity testing in this report are based on a procedure common to water quality assessment in Canada.

In the basic short term acute lethality test, an equal number of Rainbow trout are exposed to a series of effluent dilutions and undiluted effluent for a fixed time period. At the end of the test, the number of fish that have died from the exposure are used in the calculation of the LC50 or the "median lethal concentration". This unit of measurement has been selected as a standard expression of short term acute lethality testing. The value is the concentration which is lethal to 50 % of the test animals at the end of a predetermined exposure. For complex waste water samples, the LC50 measurement is usually expressed as a percentage of effluent volume and the duration of the exposure is 96 hours. LC50 percentages are inversely related to the degree of acute toxicity; for example, lower LC50 numbers represent greater effect.

Effluent samples where no fish die in undiluted effluent (100 %) or in any of the dilutions are considered non-lethal. Non-lethal effluents are less likely to produce adverse impacts in the environment after dilution.

For bioassays where less than half the test fish die in 100 % effluent, and the data does not support the calculation of an LC50, the acute lethality is reported as "LC50 > 100 %". This designation indicates mortalities occurred during testing, however a concentration greater than the undiluted effluent would be required to kill 50 % of the test fish.

3.0

COMPLIANCE AND EXCEEDANCES

Compliance in this report means that, for the year reported, the discharged effluent did not exceed ministry-set effluent criteria. Non-compliance is reported as the number of times in the year that any discharge exceeded MOEE criteria. However, only the exceedances of legally enforceable limits in control orders, requirements and direction, certificates of approval and federal regulations may result in prosecutions. Guidelines are not legally enforceable.

The Ministry will continue to expect industrial dischargers to meet all numerical limits including guidelines until replaced by the limits set in the MISA limits regulations.

3.1

Compliance With Guidelines or Requirements

The actual monthly averages were compared to effluent requirements. Appendix A, Three Year Compliance Summary, at the end of this volume reports the compliance performance of dischargers.

Compliance status with monthly averages: *

Year and Number of Sources Reported	COMPLIANCE	
	YES	NO
1991 - 169	84	85
1990 - 167	77	90
1989 - 170	77	93
1988 - 168	77	91

* Includes companies with site-specific requirements other than monthly average limits.

Compliance status of companies discharging into the Great Lakes Basin only:

Year and Number of Sources Reported	COMPLIANCE	
	YES	NO
1991 - 137	70	67
1990 - 137	70	67
1989 - 138	66	72
1988 - 140	65	75

* Includes companies with site-specific requirements other than monthly average limits.

The 1991 results showed that industrial dischargers met individual monthly limits 7606 times out of 8486 monitored, or 89.6% of the time. This compares with 1990 where dischargers met limits 7,196 out of 7,966 monitored or 90.3% of the time. Individual monthly compliance for each company is shown on the data sheets in Volume II, Appendix A. The 169 industrial plants in this report are more than the number of the sources reported in 1990 by two (2) because six (6) new dischargers were added and four (4) ceased operations by the end of 1990. The number of dischargers in compliance in 1991 was 84 (49.7%) out of 169.

In the period from 1990 to 1991, nineteen (19) companies that were not in compliance in 1990 achieved compliance in 1991. At the same time, however, thirteen (13) companies that were in compliance in 1990 were out of compliance in 1991. In 1991, sixty-seven (67) dischargers took actions to address 1991 non-compliance; five (5) companies ceased operations for economic reasons; and the remaining thirteen (13) require further action to be in compliance, or had one-time exceedances.

4.0

ABATEMENT AND REMEDIAL ACTIONS

There are a number of reasons why a company may be out of compliance. These vary from isolated incidents (for example, breakdowns of equipment, operating or laboratory errors which are either one-time occurrences or are corrected at the time), to basic deficiencies in treatment capability. The former can occur at any time. The latter, however, may result in continuing non-compliance, since equipment changes or modifications are usually required to improve treatment effectiveness, changes which can take

considerable time. The Ministry requests dischargers to develop an action plan which will bring the discharger into compliance.

Compliance action, which dischargers must undertake to follow orders issued by the Ministry, can often take several years to complete, because of the time required for identification of the problem, analysis of remedial options, selection of an option, purchase of equipment, delivery, installation, and start-up. In some cases there may be a quick fix. Often, however, a combination of process and equipment changes are required. Appendix B in this Volume is a review of action taken to address 1991 non-compliance.

Continuing long-term non-compliance without a remedial action program is unacceptable to the Ministry and can result in legal action against the offending discharger. The MISA program will address the issue of legally enforceable criteria for all companies, initially in the nine major industrial sectors, by setting effluent limits and compliance dates.

4.1

Enforcement Actions

Regional staff refer non-compliance occurrences to the Investigations and Enforcement Branch, for investigation and where warranted, prosecution. Violation of a Certificate of Approval or Control Order requirement, however, does not necessarily mean that charges are laid.

During 1991, a total of sixty-eight (68) certificate of approval and eleven (11) control order violations by twenty-two (22) companies were forwarded to the Investigations and Enforcement Branch for further investigations. At five (5) sites no investigation was necessary because the dischargers agreed to take abatement action. As a result of the investigations, charges were laid against three (3) dischargers, all were fined. After an investigation of fourteen (14) dischargers, no charges were laid. Appendix C in this Volume summarizes these enforcement activities.

SELF MONITORING REQUIREMENTS AND AUDIT PROCESS

All of the plants included in this report monitor their own discharges. Prior to the MISA monitoring regulations, most dischargers monitored their effluents on an agreed upon voluntary basis. For some dischargers, the monitoring requirement and schedules were specified in control orders, certificates of approval or federal regulations such as the Chlor-Alkali Regulation or the MISA effluent monitoring regulations.

Although the MISA monitoring phase was completed by July 1992, the ministry continued to collect audit samples using MISA protocols to verify industry submitted results.

1. Samples were taken by the Ministry, and the results were compared to the industry's reported results .
2. Periodic twenty-four hour composite samples were split between the plant and the Ministry, and results were compared.
3. Periodic grab-samples were split between the plant and the Ministry, and the samples compared.
4. For those dischargers subject to the MISA regulations, intensive on-site inspections were conducted as part of the implementation of those regulations for that sector.

DATA MANAGEMENT SYSTEMS

A variety of data management systems are used to collate data for the preparation of the annual discharge reports. A considerable number of human resources are used to maintain these data systems. These systems are:

- the Industrial Monitoring Information System (IMIS)
- the MISA Data Entry System (MIDES)
- the Sample Information System (SIS)
- the Toxicity Data Entry System (TOXDATA)

IMIS, a data storage and reporting program was one of the two systems used to gather data for this report. Discharge data from the industrial plants were submitted on paper copy to the Ministry of the Environment District offices. Ministry staff in turn, transferred the data to IMIS via a personal computer (PC) linked to the central mainframe computer in Toronto. Some of the data tables, as reported in Volume II, Appendix A, were created from the IMIS data banks.

This system was sufficient for data processing where typically a company would monitor from two to a dozen parameters (pollutants) at only a few sample locations. Under the MISA Monitoring Regulations, companies were monitoring from a few parameters to more than one hundred at more than thirty sample locations. The number of parameters and sample locations varied from company to company and from sector to sector.

Because of the large amount of data that was being generated under the MISA monitoring regulations, it was necessary for the industries to submit MISA data in a specified Electronic Transfer File (ETF) format acceptable to the Ministry.

The MIDES program was designed by the Ministry of the Environment, as a PC-based system, for use by the discharger to report analytical data. This system allows dischargers under the monitoring regulations to enter MISA data and submit this data in an ETF format on computer diskettes to the Regional Ministry offices. MIDES also prepares and prints hard copy reports of the data for submission to the Ministry.

The regional Ministry offices have enhanced versions of MIDES that allow preparation of ETF files for transmission to the corporate SIS system.

The Sample Information System (SIS) is a database storage system for many Ministry programs and is the final destination for all MISA data obtained under the Monitoring Regulations.

Under the MISA program dischargers were also required to determine the relative acute toxicity of their discharge. This entailed testing the effect of the sample effluent on either trout or Daphnia magna, and measuring the degree of lethality.

The TOXDATA system was designed to allow the discharger to enter this toxicity data and generate the Electronic Transfer File and printed reports required by the Ministry. Computer diskettes containing TOXDATA files were sent to the Limnology Section - Toxicity Unit of the Water Resources Branch for compliance verification and entry into the central TOXDATA data base.

7.0

INQUIRIES

Inquiries about a specific source's effluent loadings, abatement program and compliance may be directed to the corresponding Ministry Regional Office or District Offices (see Figure 3). The addresses and phone numbers of the six regions and their respective district offices are listed in Volume I, Appendix D).

Volume II of this report, - "Data for Individual Plant Performance" is available separately in hardcopy or computer diskette. Copies of both volumes of this report are available from:

Public Information And Inquiry Services
Ministry of Environment and Energy
135 St. Clair Ave. West, 2nd Floor
Toronto, Ontario
M4V 1P5

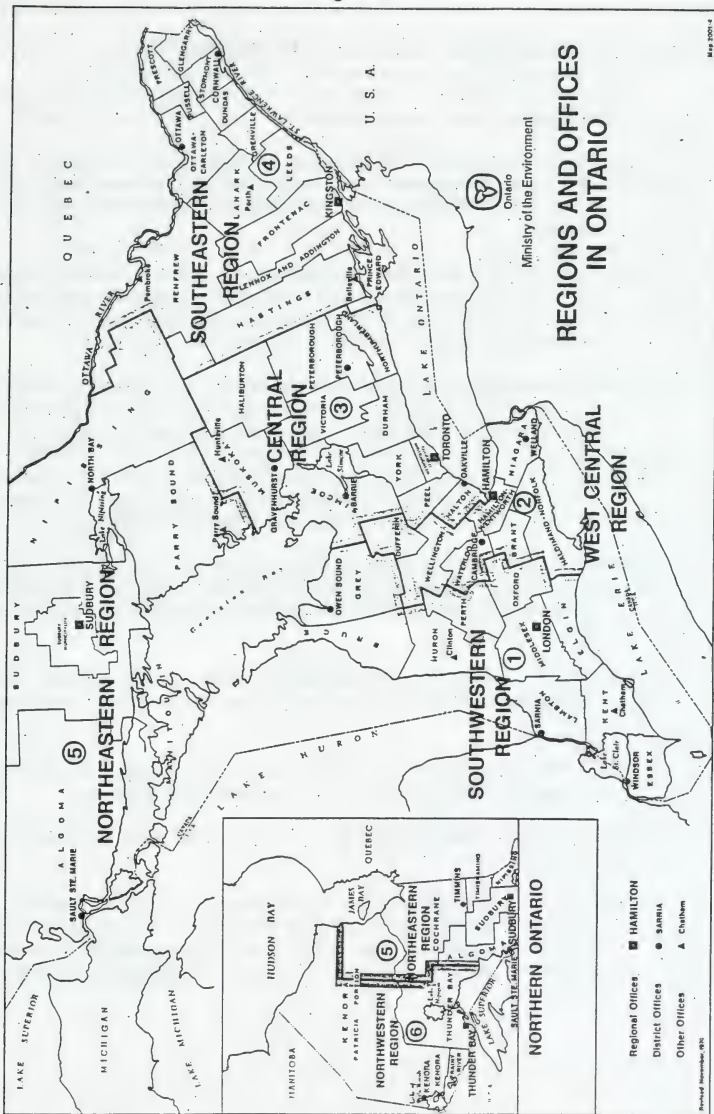
(416) 323-4321

8.0

REFERENCES

For further reading on industrial discharges, municipal STPs, and other environmental issues, please contact the Ministry's Public Information office listed above.

Figure 1



Acute in toxicity testing means a rapid response to a stimulus within 96 hours or less and results in short or rapid mortality.

Ammonia plus Ammonium (Total ammonia) is a measure of ionized and un-ionized ammonia. The amount of un-ionized ammonia depends upon pH and temperature; concentrations of un-ionized ammonia above 0.02 mg/L are toxic to fish.

Bioassay is a test used to evaluate the relative potency for a chemical by comparing its effect on a living organism with the effect of a standard preparation on the same type of organism. Bioassays are frequently used in the pharmaceutical industry to evaluate the potency of vitamins and drugs.

Biochemical Oxygen Demand (BOD) is a measure of the oxygen used, usually over a 5 day period, to biodegrade organic and some inorganic material. The amount of oxygen used over the test period is reported in mg/L.

Certificate of Approval (C of A) is a legal document issued at the discharger's request and the issuance of which signifies ministry approval to construct. New C of As include effluent limits and monitoring requirements.

Chemical Oxygen Demand (COD) is a measure of the total oxygen to degrade organic and inorganic material by chemical oxidation. Characteristic relationships between COD, BOD, TOC and DOC may be established for a given wastewater.

Compliance is a measure of the discharger's performance in meeting ministry effluent requirements which may be legal limits or guidelines throughout the year.

Control Order is a legal document initiated by the ministry that requires the discharger to take specific action with an associated deadline.

Dissolved Organic Carbon (DOC) is a measure of the total dissolved organic material.

Oil and Grease (Solvent Extractables) is a measure of dissolved hydrocarbons, oils, greases, surfactants, etc., which may be visible as a sheen on the water surface. This test yields variable data depending on sampling procedures, the solvent used for extraction and the types of hydrocarbons present in the sample.

pH is a measure of hydrogen ion concentration on a logarithmic scale of 0 (acidic) to 14 (pH 12 - ammonia). Surface waters have a pH range of 6 to 7.

Phenolics (4AAP) is the result of the total phenolics by the 4-amino antipyrine test and is an indicator of some types of pollution.

Sulphides (usually hydrogen sulphide) is a measure of sulphides and can be toxic to fish (depends upon pH, temperature and dissolved oxygen).

Total Kjeldahl Nitrogen (TKN) is a measure of both organic nitrogen and total ammonia; acts as an aquatic plant nutrient.

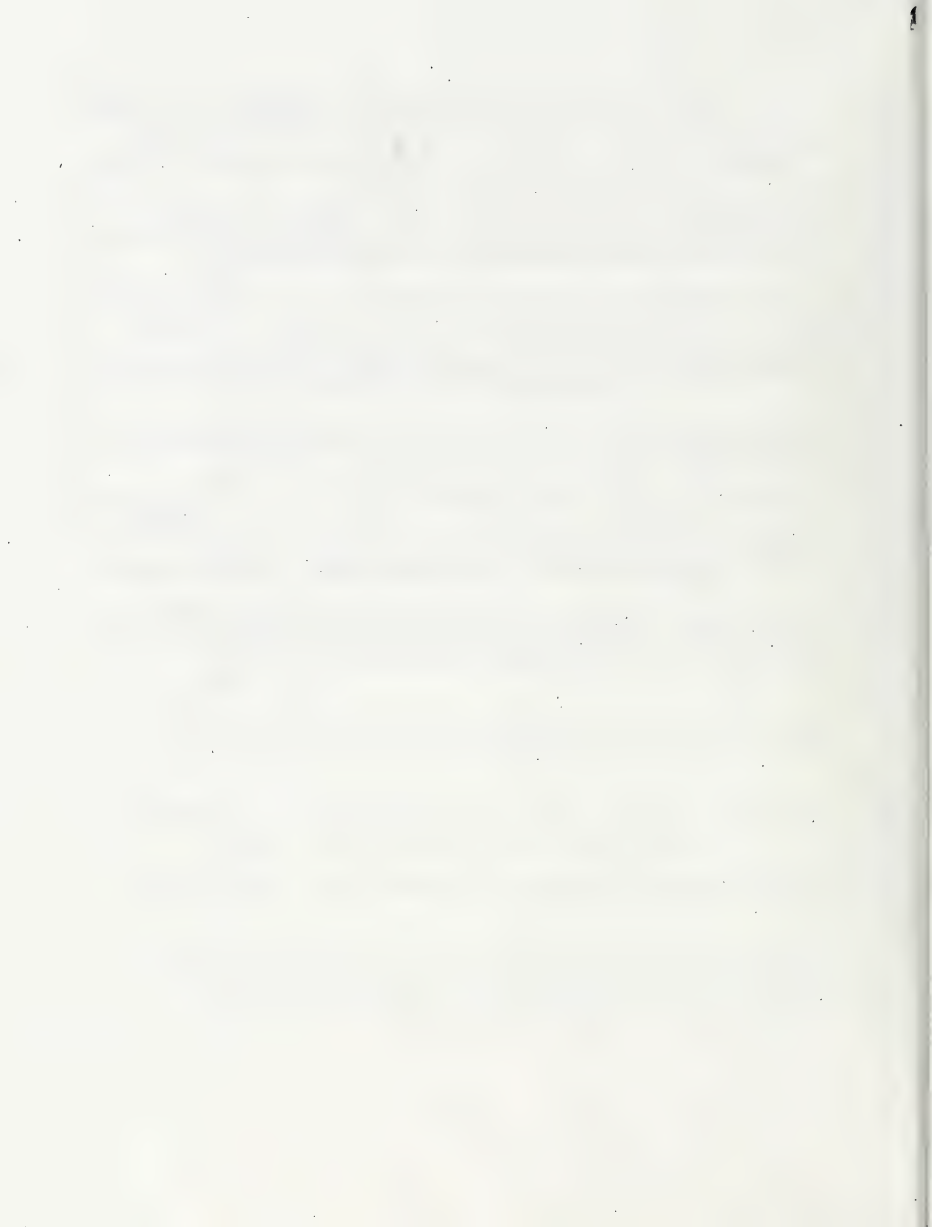
Total Nitrates and Nitrites (NO₃ and NO₂) is a measure of the oxidized forms of nitrogen and must be less than 10 mg/L in drinking water.

Total Organic Carbon (TOC) is a measure of the total dissolved and suspended organic material.

Total Phosphorus (P) is a measure of the total phosphorus content and is an aquatic plant nutrient.

Total Suspended Solids (TSS) is a measure of suspended organic and inorganic material.

Toxicity Test is a measure of the degree of response of the exposed test organism, say a fish, to a specific effluent or chemical.



Appendix A **THREE YEAR COMPLIANCE SUMMARY**

COMPANY NAME	LOCATION	PAGE NUMBER	COMPLIANCE *		
			1989	1990	1991
Abitibi-Price Inc. (Iroquois Falls Division)	Iroquois Falls	A-1	Y	N	Y
Abitibi-Price Inc. (Fort William Division)	Thunder Bay	A-2	Y	Y	N
Abitibi-Price Inc. (Provincial Papers Division)	Thunder Bay	A-3	Y	N	Y
Abitibi-Price Inc. (Thunder Bay Division)	Thunder Bay	A-4	N	N	N
ADM/Ogilvie Mills Ltd.	Thunder Bay	A-5	N	N	N
Algoma Steel Inc.	Sault Ste. Marie	A-6	N	N	N
Algoma Steel Inc., Algoma Ore Division	Wawa	A-8	N	N	N
American Barrick Resources	Kirkland Lake	A-9	Y	N	Y
American Standard - Division of Wabco	Cambridge	A-10	N	N	N
Atlas Speciality Steels	Welland	A-11	N	Y	N
Ault Foods Ltd.	Winchester	A-12	N#	N#	N#
Beaver Wood Fibre Company	Thorold	A-13	Y	Y	Y
B.F. Goodrich	Niagara Falls	A-14	Y	N	N
Boise-Cascade Canada Ltd.	Fort Frances	A-15	Y	N	N
Boise-Cascade Canada Ltd.	Kenora	A-17	Y	Y	N
CAL Graphite	Kearny	A-18	-	-	N
Cameco	Blind River	A-19	Y	Y	Y
Cameco	Port Granby	A-20	N	N	N
Cameco	Port Hope	A-21	Y	N	Y
Cameco	Welcome	A-22	Y	Y	Y
Campbell Soup Company Ltd.	St. Marys	A-23	N	N	N
Canadianoxy Chemicals Ltd.	Fort Erie	A-24	N	N	N
Canadian Pacific Forest Products Ltd.	Dryden	A-25	Y	Y	Y
Canadian Pacific Forest Products Ltd.	Thunder Bay	A-26	Y	N	N
Canadian Salt Company Ltd., The	Windsor	A-28	Y	N	Y
Canamax Resources Inc., Kremzar Mine	Sault Ste. Marie	A-29	-	-	Y
Casco Ltd.	Cardinal	A-30	N	N	Y

* Based on Monthly Averages except where noted by #, are based on Annual Averages.
The Three Year compliance information is extracted from the annual Industrial Direct Dischargers Reports. Dischargers with legal criteria such as Control Orders or Certificates of Approval may also have parameters assessed by provincial guidelines. Non-compliance as listed in this table may be with legal criteria, guideline numbers or both.

For more detailed compliance assessment refer to the appropriate annual dischargers report.

"PAGE NUMBER" refers to the "Report on the 1991 Industrial Direct Discharges in Ontario - Volume II: Appendices".

Appendix A ... continued
THREE YEAR COMPLIANCE SUMMARY

COMPANY NAME	LOCATION	PAGE NUMBER	COMPLIANCE *		
			1989	1990	1991
Celanese Canada Ltd.	Kingston	A-31	Y	Y	Y
Champlain Industries Ltd.	Tara	A-32	Y	N	N
Cornwall Chemicals Limited	Cornwall	A-33	N	N	N
Courtaulds Fibres	Cornwall	A-34	N	N	N
Cyanamid Canada Inc.	Niagara Falls	A-35	N	Y	N
Cyanamid Canada Inc. Welland Plant	Welland	A-36	Y	N	N
Deak Resources (formerly Golden Shield Res.)	Virginiatown	A-38	N	N	N
Denison Mines Ltd. (Stanrock)	Elliot Lake	A-39	Y	Y	Y
Denison Mines Ltd. (Stollery Lake)	Elliot Lake	A-40	Y	Y	Y
Denison Mines Ltd. (Williams Lake Tailings)	Elliot Lake	A-41	Y	Y	Y
Dickenson Mine Ltd. (A.W. White Mine)	Balmertown	A-42	N	N	N
Dofasco Inc.	Hamilton	A-43	N	N	N
Domtar Inc. (Containerboard Division)	Trenton	A-44	N	N	N
Domtar Inc. (Fine Papers Division)	Cornwall	A-45	N	N	Y
Domtar Inc. (Containerboard Division)	Red Rock	A-46	N	N	N
Domtar Specialty Fine Papers Inc.	St. Catharines	A-47	N	N	N
Domtar Inc. (Wood Preserving Division)	Trenton	A-48	N	N	N
Dow Chemical Canada Ltd.	Sarnia	A-49	Y	Y	Y
Dupont Canada Inc.	Corunna	A-50	Y	Y	Y
Dupont Canada Inc.	Kingston	A-51	Y	Y	Y
Dupont Canada Inc.	Maitland	A-52	Y	Y	Y
Eastmaque Gold Mines	Kirkland Lake	A-53	N	N	N
E.B. Eddy Forest Products Ltd.	Espanola	A-54	Y	N	Y
E.B. Eddy Forest Products Ltd.	Ottawa	A-55	N	N	Y
Esso Chemical Canada Ltd.	Sarnia	A-56	Y	Y	Y
Esso Petroleum Canada Ltd.	Nanticoke	A-57	Y	Y	Y
Esso Petroleum Canada Ltd.	Sarnia	A-58	Y	Y	Y
Eseroc Canada Inc.	Pictou	A-59	N#	Y#	N#
Ethyl Canada Inc.	Corunna	A-60	Y	Y	Y
Exolon-Eak Company of Canada Ltd.	Thorold	A-61	Y	Y	N
Explosive Technologies Int. Inc. (ETI)	North Bay	A-62	N	N	N
Falconbridge Ltd. (Kidd Creek Met. Site)	Timmins	A-63	N	N	N
Falconbridge Ltd. (Kidd Creek Mine Site)	Timmins	A-64	N	N	Y
Falconbridge Ltd. (Lockerby Mine)	Denison	A-65	Y	Y	Y
Falconbridge Ltd. (Moose Lake W.W.T.P.)	Onaping Falls	A-66	N	N	Y
Falconbridge Ltd. (N.I.R. Rd.)	Falconbridge	A-67	N	N	N
Falconbridge Ltd. (Onaping Mine)	Onaping Falls	A-68	N	Y	N

Appendix A ... continued
THREE YEAR COMPLIANCE SUMMARY

COMPANY NAME	LOCATION	PAGE NUMBER	COMPLIANCE *		
			1989	1990	1991
Fiberglas	Sarnia	A-69	Y	Y	Y
Fleet Manufacturing Company Ltd.	Fort Erie	A-70	N	Y	Y
Ford Motor Company Ltd.	Niagara Falls	A-71	N	Y	N
Ford Motor Company Ltd.	St. Thomas	A-72	N	Y	Y
Ford Motor Company Ltd.	Windsor	A-73	N	N	N
Gay Lea Foods Co-op Ltd.	Teeswater	A-74	N	Y	Y
G.E. Plastics Ltd.	Cobourg	A-75	N	Y	Y
General Chemical Canada Ltd.	Amherstberg	A-76	N	N	N
General Motors Company Ltd.	St. Catharines	A-77	N	N	N
Glen Ayr Kitten Mills	Lanark	A-78	N	N	N
Heley Industries	Heley	A-79	N	N	N
Hemlo Gold Mines	Marathon	A-80	Y	Y	Y
Highline Produce Ltd.	Wellington	A-81	N	N	N
Horizon Poultry Products	Ayr	A-82	Y	N	N
I.C.I. Canada Inc. Conpak	Cornwall	A-84	N	N	N
I.C.I. Canada Inc.	Courtright	A-85	Y	Y	Y
I.C.I. Forest Products	Cornwall	A-86	N	N	N
Inco Ltd. (Copper Cliff Nickel Refinery)	Copper Cliff	A-87	N	N	N
Inco Ltd. (Copper Cliff W.W.T.P.)	Copper Cliff	A-88	N	N	N
Inco Ltd. (Crean Hill Mine)	Copper Cliff	A-89	N	N	N
Inco Ltd. (Garson Mine)	Copper Cliff	A-90	N	N	N
Inco Ltd. (Levack Tailings Area)	Copper Cliff	A-91	N	N	N
Inco Ltd. (Nolin Creek W.W.T.P.)	Copper Cliff	A-92	N	N	N
Inco Ltd. (Metals Refinery)	Port Colborne	A-93	Y	Y	N
Inco Ltd. (Shebandowan Property)	Shebandowan	A-94	Y	Y	Y

Appendix A ... continued
THREE YEAR COMPLIANCE SUMMARY

COMPANY NAME	LOCATION	PAGE NUMBER	COMPLIANCE *		
			1989	1990	1991
INCO Ltd. Whistle Mine	Sudbury	A-95	-	-	N
International Minerals and Chemicals	Dunnville	A-96	Y	Y	Y
James River-Marathon, Ltd.	Marathon	A-97	Y	Y	Y
Kimberly-Clark of Canada Ltd.	Huntsville	A-98	Y	N	Y
Kimberly-Clark of Canada Ltd.	St. Catharines	A-99	Y	N	N
Kimberly-Clark of Canada Ltd.	Terrace Bay	A-100	Y	Y	N
Kirkland Lake Power	Kirkland Lake	A-101	-	-	N
Kraft Foods Ltd.	Ingleside	A-102	N	N	N
Lac D'Amiante Du Quebec Ltée. (Aquarius)	Timmins	A-103	N	N	N
Lac Minerals Golden Patricia Mine (form. Bond Gold Canada Ltd.)	Sioux Lookout	A-104	Y	Y	N
Lac Minerals (Macassa Division)	Kirkland Lake	A-105	N	N	N
Lafarge Canada Inc.	Bath	A-106	Y	Y	Y
Luzenac Inc.	Foleyat	A-107	N	Y	Y
MacMillan Bloedel Ltd.	Sturgeon Falls	A-108	Y	N	N
Malette Kraft Pulp and Power	Smooth Rock Falls	A-109	Y	Y	Y
Mattabi Mines Ltd.	Kenora District	A-110	N	N	Y
McBean Mine Ltd.	Dobie	A-111	N	N	Y
Minnova Inc. (Winston Lake Project)	Schreiber	A-112	N	N	Y
Mitsubishi Electronics Ind. Can. Inc.	Midland	A-113	Y	N	Y
Musoch - Magino Mine	Dubreuilville	A-114	-	-	N
Musoch - Magnacon Mine	Wawa	A-115	-	-	N
Nabisco Brands Ltd.	St. Davids	A-116	Y	Y	Y
Nestle Enterprises Ltd.	Chesterville	A-117	N	N	N
Nitrochem Inc.	Maitland	A-118	N	N	N
Noranda Forest Inc.	Thorold	A-119	N	N	N
Noranda Inc. (Lyon Lake Division)	Ignace	A-121	N	N	N
Noranda Minerals Inc. (Geco Division)	Menitouwadge	A-122	N	Y	Y
Northern Wood Preservers Ltd.	Thunder Bay	A-123	N	N	N
Norton Advanced Ceramics of Canada	Niagara Falls	A-124	Y	Y	Y
Novacor Chemicals Canada Ltd.	Mooretown	A-125	N	N	Y
Novacor Chemicals Canada Ltd.	Corunna	A-126	Y	Y	Y
Omatead Foods Ltd.	Wheatley	A-127	N	N	N
Ontario Hydro (Atikokan TGS)	Atikokan	A-128	Y	Y	Y
Ontario Hydro (Bruce NPGS - STP)	Tiverton	A-129	Y	Y	Y
Ontario Hydro (Bruce NPGS - Station A, B)	Tiverton	A-130	Y	Y	Y

Appendix A ... continued
THREE YEAR COMPLIANCE SUMMARY

COMPANY NAME	LOCATION	PAGE NUMBER	COMPLIANCE *		
			1989	1990	1991
Ontario Hydro (Bruce NPGS - Heavy Water)	Tiverton	A-131	Y	Y	Y
Ontario Hydro (Lakeview TGS)	Toronto	A-132	N	Y	Y
Ontario Hydro (Lambton TGS)	Courtright	A-133	N	Y	Y
Ontario Hydro (Lennox TGS)	S. Fredericksburg	A-134	N	Y	N
Ontario Hydro (Nanticoke TGS - Ash Lagoon)	Nanticoke	A-135	Y	Y	N
Ontario Hydro (Nanticoke TGS - Cooling Water)	Nanticoke	A-136	Y	Y	Y
Ontario Hydro (Pickering NPGS - Station A, B)	Pickering	A-137	Y	Y	Y
Ontario Hydro (Thunder Bay TGS)	Thunder Bay	A-138	Y	Y	Y
Petro Canada Products Inc.	Mississauga	A-139	N	N	N
Petro Canada Products Inc.	Oakville	A-140	N	N	N
Placer-Dome Inc. (Campbell Red Lake Mine)	Balmertown	A-141	N	N	N
Placer-Dome Inc. (Detour Lake Mine)	Timmins	A-142	N	N	Y
Placer-Dome Inc. (Dome Mine)	South Porcupine	A-143	Y	Y	Y
Placer-Dome Inc. (Dona Lake Mine)	Pickle Lake	A-144	Y	Y	Y
Polysar Rubber Corporation	Sarnia	A-145	Y	Y	Y
QUNO Corporation (formerly Quebec and Ontario Paper Company Ltd.)	Thorold	A-146	Y	Y	Y
Rexwood Products Ltd.	New Liskeard	A-147	N	N	N
Rio Algom Ltd. (Panel Mill)	Elliot Lake	A-148	N	Y	Y
Rio Algom Ltd. (Quirke Mill)	Elliot Lake	A-149	N	Y	Y
Rio Algom Ltd. (Stanleigh Mill)	Elliot Lake	A-150	Y	Y	Y
Rohm and Haas	Morrisburg	A-151	N	Y	Y
Rothsay Ltd. (formerly ORENCO)	Dundas	A-152	N	N	N
Rothsay Ltd.	Rothsay	A-153	N	N	N
Royal Oak Mines Inc. (Pamour)	Timmins	A-154	Y	N	N
Royal Oak Mines Inc. (Schumacher)	Timmins	A-156	N	Y	N
Shell Canada Products Ltd.	Corunna	A-157	Y	Y	Y
Sifto Canada Inc.	Goderich	A-158	N	N	N
Sonoco Ltd. Trent Valley Mills	Glen Miller	A-159	N	N	N
Spruce Falls Inc.	Kapuskasing	A-160	Y	N	Y
St. Andrew Goldfields Ltd.	Stock Twp.	A-161	-	N	N
St. Marys Paper Inc.	Sault Ste. Marie	A-162	Y	Y	Y
Stanley Hardware	New Hamburg	A-163	N	Y	Y
Stelco Inc. (Hilton Works)	Hamilton	A-164	Y	Y	Y
Stelco Inc. (Lake Erie Works)	Nanticoke	A-165	Y	N	Y
Stelco Inc. (Page Hersey Works)	Welland	A-166	Y	Y	Y
Stelco Inc. (Welland Tube Works)	Welland	A-167	N	Y	Y

Appendix A ... continued
THREE YEAR COMPLIANCE SUMMARY

COMPANY NAME	LOCATION	PAGE NUMBER	COMPLIANCE *		
			1989	1990	1991
Stepan Canada Inc.	Longford Mills	A-168	Y	Y	Y
Strathcona Paper Co.	Camden E. Twp.	A-169	N	N	N
Suncor Inc.	Sarnia	A-170	Y	N	N
Teck-Corona Inc. (David Bell Mine)	Marathon	A-171	Y	Y	Y
The Poultry Company (formerly Tend-R-Fresh)	Dundas	A-172	N	Y	Y
Valeo Engine Cooling Ltd.	Stratford	A-173	N	N	N
Washington Mills Ltd.	Niagara Falls	A-174	Y	Y	Y
Washington Mills Ltd. (Electro Minerals)	Niagara Falls	A-175	Y	Y	Y
Williams Operating Corp.	Marathon	A-176	Y	Y	Y
BTL Specialty Resins	Belleville	-	N	N	Closed
Dofasco Inc., Adams Mine	Kirkland Lake	-	N	N	Closed
Falconbridge Gold Corp. (Bell Creek Mine)	Porcupine	-	N	N	Closed
Wickes Manufacturing Co. Ltd.	Windsor	-	N	N	Closed

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Central Region

EXCEEDENCES

ACTIONS

Cameco
Port Granby

Federal/Provincial Mining
Effluent guideline for Arsenic
was exceeded 12 times during
1991.

No exceedances of the AECB
licence were reported in 1991.
The site will be decommissioned
as soon as a federally
appointed task force identifies
a new site.

Page A-20

*** In Compliance Now:**
Yes

Petro-Canada Products Inc.
Mississauga Plant

The guidelines under the
Ontario Effluent Quality
Objectives for Petroleum
Refineries were exceeded for
parameters: suspended solids 3
times; phenols 3 times in 1991.

The phenol exceedance in
January and February were
caused by a toxic shock
upstream plant upset. The
remaining exceedances were
caused by excess flow due to
storm water. Petro-Canada
effectively dealt with the
upset and implemented further
spill prevention strategies.

Page A-139

In Compliance now:
Yes

Petro-Canada Products Inc.
Oakville Plant

Certificate of Approval limits
for suspended solids were
exceeded 7 times and phenols
were exceeded 1 time in 1991.

The residual particulate and
phenol exceedances occur when
storm events result in the
volume of effluent exceeding
the wastewater treatment
capacity. A storm water
diversion program has been
undertaken and expansion of the
wastewater treatment plant is
planned. In compliance in 1993
for phenol.

Page A-140

In Compliance now:
No

*** "In compliance now:" is the compliance status at the end of 1992,
for all companies in Appendix B.**

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northeastern Region

EXCEEDANCES

ACTIONS

Algoma Steel
Sault Ste Marie

Implementation of Blast Furnace
Discharge Recycle is planned
for 1996.

Suspended Solids (RSP) (1),
Phenols (1), Zinc (2) at Bar &
Strip Lagoon.

Suspended Solids (RSP) (1) at
30" Sewer.

Page # A-6

In compliance now:
Yes

Algoma Steel
Algoma Ore Division
Wawa

Tailings dam works/repairs were
completed in the summer of
1991.

Exceedances of suspended solids
(1) contrary to Guidelines.

Page # A-8

In compliance now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northeastern Region

EXCEEDANCES

ACTIONS

Cal Graphite Corporation
Town of Kearney

There were 10 exceedances of Cadmium and 22 of Suspended Solids

Cadmium exceedances are due to improper method detection limit. The Certificate of Approval limit is being reassessed.

In Compliance now:

No

Suspended Solids exceedances were due to slump in filter dam media. Dam was quickly repaired. No measurable impact on receiver.

Page # A-18

In Compliance now:

Yes

Deak Resources Corporation
Kerr Mine/Mill
Virginiatown

Total Metals (CU, NI, PB, ZN) (9), Total Cyanide (7), Iron (2), Nickel (3), Suspended Solids (RSP) (2)

The company applied for a Certificate of Approval in September 1991 to install an Inco SO²/Air cyanide destruction system. Operation of the treatment system commenced in June 1992.

Page # A-38

In compliance now:

No

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northeastern Region

EXCEEDANCES

ACTIONS

Eastmaque Gold Mines Ltd.
Kirkland Lake

Suspended Solids (RSP) (16),
Iron (10)

The company has taken some action to prevent short circuiting of system and has indicated they will take all necessary steps to prevent this problem from occurring in the future.

Page # A-53

In compliance now:
Yes

E. B. Eddy Forest Products
Espanola, Ontario

A new device was installed in September 1992.

The flow measuring device for the final effluent failed to meet the Control Order requirement of $\pm 15\%$ accuracy.

Page A-54

In compliance now:
Yes

Explosives Technologies Int.
Inc.
North Bay

There was one exceedance of the ammonia guideline.

Minor exceedance of the guideline did not cause any measurable impact on the receiver. No changes to the system are planned at this time.

Page # A-62

In compliance now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northeastern Region

EXCEEDANCES

ACTIONS

Falconbridge Ltd.
Kidd Creek Mine Division
Metallurgical Site
Timmins

Zinc (1), Suspended Solids
(RSP) (2), copper (1)

Page # A-63

A computerized telemetry system was installed in 1990 to improve effluent quality control. A dredging program will be undertaken in 1992 to increase retention times in the polishing pond. Also, the polishing pond will be divided in two in order to improve polishing.

In compliance now:
Yes

Falconbridge Ltd.
Falconbridge, NIR Road

Two exceedances of iron
contrary to Certificate of
Approval.

Page # A-67

A plan of action has been requested from the company. The C. of A. was amended in June 1991 to permit the construction of a system to correct the problem. This will be evaluated in 1992.

In compliance now:
Yes

Falconbridge Ltd.
Onaping Mine, Onaping Falls

One exceedance of iron and
three exceedances of suspended
solids contrary to the
Guidelines for Environmental
Control in the Ontario Mineral
Industry - 1981.

Page # A-68

The waste stream is being diverted to the Moose Lake Treatment System where increased retention time should mitigate the problems. The diversion commenced in November 1991.

In compliance now:
Yes.

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northeastern Region

EXCEEDANCES

ACTIONS

INCO Ltd.
Copper Cliff Nickel Refinery

One exceedance of nickel
contrary to Guidelines.

Page # A-87

Company is investigating
feasibility of re-routing
effluent to Copper Cliff
tailings area.

In compliance now:
No

INCO Ltd.
Copper Cliff Creek Wastewater
Treatment Plant

Exceedances of iron (3), nickel
(9), suspended solids (10),
cadmium (1), copper (1), in
violation of Certificate of
Approval.

Page # A-88

A.C. of A. was issued in July
1991 with conditions to address
the present bypass situation
and assess the need for
increasing treatment
capability. The company has
submitted an initiative report
and it is under review review
by the MOEE.

In compliance now:
No

INCO Ltd.
Crean Hill Mine

Four exceedances of pH contrary
to Guidelines.

Page A-89

Tailings effluent is batch
treated with lime. Increased
frequency of pH monitoring is
being proposed to improve
treatment efficiency.

In compliance now:
Yes

INCO Ltd.
Garson Mine

Exceedance of nickel (3)
contrary to Guidelines.

Page # A-90

Company is investigating ways
to improve treatment
efficiency. Mine is presently
not operating.

In compliance now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northeastern Region

EXCEEDANCES

ACTIONS

INCO Ltd.
Levack Tailings Area

Exceedances of suspended solids (6), nickel (5) and iron (1) contrary to Guidelines.

Page # A-91

Dredging of ponds is planned in 1992 in order to increase retention time and reduce exceedances.

In compliance now:
No

INCO Ltd.
Nolin Creek Wastewater Treatment Plant

Exceedances of copper (7), iron (8), nickel (8) and suspended solids (5), zinc (1) in violation of Certificate of Approval.

Page # A-92

A C. of A. was issued in July 1991 with conditions requiring a study to address the present bypassing situation and assess the need for increased treatment capability. The company has submitted an initiative report to reduce bypasses and exceedances and it is under review by MOEE.

In compliance now:
No

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northeastern Region

EXCEEDANCES

ACTIONS

**INCO Ltd. - Whistle Mine
Sudbury, Ontario**

The Certificate of Approval requirements were issued in April 1991.

Cadmium was exceeded once and this is the only exceedance recorded after issuance of the C of A.

The company exceeded the guideline requirements from January to April 1991 on six occasions. Nickel (2) exceedances, suspended solids (3) and one pH exceedance.

Page # A-95

An automatic lime addition system has been installed in 1992 to improve effluent quality. The company will continue to sample for cadmium to verify the exceedance.

In compliance now:
Yes

**Kirkland Lake Power
Kirkland Lake**

pH (30, Zinc (3), Suspended Solids (RSP) (4)

Page # A-101

The company added lime and coagulants and improved the outfall of the ash settling pond and revised the start-up procedure. A permanent acid storage tank and metering system will be added.

In compliance now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northeastern Region

EXCEEDANCES

ACTIONS

Lac D'Amiante du Quebec Ltee.
Aquarius Mine
Porcupine

Suspended Solids (RSP) (1)

Operation is currently dormant.
Prior to milling operations
restarting, a lift will be
added to tailings area,
increasing retention time for
settling of solids.

Page # A-103

In compliance now:
Yes

Lac Minerals (Macassa Division)
Kirkland Lake

Cadmium (1), Suspended solids
(RSP) (5), Phenols (5), Iron
(4)

No remedial measures required
for the cadmium exceedance. The
company plans on stabilizing
the slopes on a drainage ditch
in order to prevent erosion,
which should reduce suspended
solids loadings. The elevated
phenol levels were due to
analytical error.

Page # A-105

In compliance now:
Yes

MacMillan Bloedel Ltd.
Sturgeon Falls

Ten exceedances of suspended
solids contrary to Control
Order.

Exceedances expected to be
eliminated when mill converts
to 100% recycled fibre in June
1993. Substantial reductions
in BOD and suspended solids
will result from the change in
process.

Page # A-108

In compliance now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northeastern Region

EXCEEDANCES

ACTIONS

Muscocho Explorations Limited
Magino Mine

None. This mine went out of production in 1992.

Mercury (8), Iron (10), Cadmium (8), Copper (3), Nickel (1), NH₃ (1), Suspended solids (1), Zinc (1)

Page # A-114

In compliance now:
Yes

Muscocho Explorations Limited
Magnacon Mine

None. This mine went out of production in 1992.

Mercury (5), Cadmium (7), Copper (7)

Page # A-115

In compliance now:
Yes

Rexwood Products Ltd.
New Liskeard

Biochemical Oxygen Demand (BOD₅) (2), Suspended Solids (RSP) (2), Phenol (1)

Stormwater has been diverted around landfill site; In July 1991, drainage culvert through the site was isolated by capping ends which has eliminated leachate flow on a permanent basis.

Page # A-147

In compliance now:
Yes

Royal Oak Mines Inc. - Pamour
Timmins

Suspended Solids (RSP) (11), total cyanide (6)

Remedial action was not required for the Suspended solids exceedances. Mill processing protocols are being developed to mitigate future exceedances of total cyanide.

Page # A-154

In compliance now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northeastern Region

EXCEEDANCES

ACTIONS

Royal Oak Mines Inc. -
Schumacher
Timmins

None required as limits were
marginally exceeded

Suspended solids (RSP) (1)

Page # A-156

In compliance now:
Yes

St. Andrew Goldfields Ltd.
Black River-Matheson

pH (7), Iron (4),
Suspended solids (RSP) (4)

Suspended solids, and iron
exceedances are attributed to
algae growth. Company is
investigating measures to
control algae; one of the
proposed measures is the use of
a flocculant. The company will
exercise greater control
regarding chemical dosage in
the treatment plant in order to
meet pH limits.

Page # A-161

In compliance now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northwestern Region

EXCEEDANCES

ACTIONS

Abitibi-Price Inc.
Fort William Division
Thunder Bay

Phosphorus guideline was
exceeded for three months
throughout the year.

Page # A-2

The company is actively
investigating ways to meet the
new Federal Regulations and is
planning effluent improvements
starting in 1993.

In Compliance Now:
Yes

Abitibi-Price Inc.,
Thunder Bay Division
Thunder Bay

Twelve daily Control Order
exceedances for BOD5 were
reported during one month.

Page # A-4

Plant was shut down in April
1991.

In Compliance Now:
N/A

ADM/Ogilvie Mills Ltd.
Thunder Bay

There are ongoing exceedances
of their suspended solids
guideline.

Page # A-5

The secondary treatment
facility is not designed to
meet the solids objectives.
Agreements have been made with
the City of Thunder Bay to re-
direct the effluent to the
Thunder Bay Pollution Control
Plant. Construction to be
completed in 1992.

In Compliance Now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northwestern Region

EXCEEDANCES

ACTIONS

**Boise-Cascade Canada Ltd.
Fort Frances**

BOD5 and Suspended solids limits were exceeded during January and March as a result of spills and evaporator upset.

Page # A-15

Once process conditions were stabilized, exceedances ceased. Expansion of secondary treatment system to start up in December 1992.

**In Compliance Now:
Yes**

**Boise Cascade Canada Ltd.
Kenora**

Suspended solids limit was exceeded in October as a result of a malfunction in the white water return system.

Page # A-17

System was repaired and company was in compliance for the remainder of the year.

**In Compliance Now:
Yes**

**Canadian Pacific Forest
Products Ltd.
Thunder Bay**

The company had four exceedances of their daily Control Order limit for suspended solids. Thirty day average values were in compliance. Phosphorus guideline was exceeded for three months throughout the year.

Page # A-26

The suspended solids exceedances were the result of a few unrelated events; each was dealt with independently. A new secondary treatment plant was installed in November 1991.

**In Compliance Now:
Yes**

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northwestern Region

EXCEEDANCES

ACTIONS

Dickenson Mines Ltd.
Arthur White Mine
Balmertown

Arsenic limit was exceeded nine times throughout the year based on monthly averages.

Effluent is shared with Placer Dome Inc. Campbell Mine. Compliance for arsenic is expected within one year of start up of new Campbell Mine pressure oxidation system in July 1991. In addition, a chemical treatment plant, scheduled to start up in December 1992 will further reduce arsenic levels in the effluent.

Page # A-42

In Compliance Now:
Yes

Domtar Packaging Ltd.
Red Rock

The suspended solids Control Order limit was exceeded on two occasions.

The two exceedances of suspended solids were due to heavy rains causing erosion of the banks of one of the outfall streams. The area has been regraded to prevent solids from entering the outfall stream.

Page # A-46

In Compliance Now:
Yes

Kimberly Clark of Canada Ltd.
Terrace Bay

Phosphorus guideline was exceeded in one month.

Exceedance was based on one sample result in a month and is not representative of the phosphorus level in the effluent.

Page # A-100

In Compliance Now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northwestern Region

EXCEEDANCES

ACTIONS

Now LAC Minerals Inc.
Golden Patricia Mine
Muskeg Lake
(formerly Bond Gold Canada
Ltd.)

Suspended solids limit was
exceeded three times (Feb.,
March and April) throughout the
year.

Page # A-104

Carryover from polishing pond
caused exceedances. Company was
in compliance for the remainder
of the year.

In Compliance Now:
Yes

Noranda Inc.
Lyon Lake Mine
Sturgeon Lake Area
District of Kenora

Suspended solids guideline
level was exceeded on one
occasion.

Page # A-121

Mine operations suspended in
July 1991.

In Compliance Now:
N/A

Northern Wood Preservers Ltd.
Thunder Bay

Marginal exceedances of the
daily phenol Control Order
limit were experienced
throughout the year.

Page # A-123

Some "house-keeping measures"
as required in the Control
Order have been implemented
which will resolve some
exceedances. However, some
required work remains "on hold"
pending the resolution of a
related Control Order appeal in
the courts.

In Compliance Now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Northwestern Region

EXCEEDANCES

ACTIONS

Placer Dome Inc.
Campbell Mine
Balmertown

Arsenic limit was exceeded nine times throughout the year based on a monthly averages.

Effluent discharge point is shared with Dickenson Mines Ltd. Arthur White Mine. Campbell Mine installed a pressure oxidation system in July 1991 to reduce arsenic and metal concentrations in effluent. Compliance for arsenic is expected one year after start up. In addition, a chemical treatment plant, scheduled to start up in December 1992 will further reduce arsenic levels.

Page # A-141

In Compliance Now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Southeastern Region

EXCEEDANCES

ACTIONS

AULT FOODS LIMITED
Winchester

Certificate of Approval loading limits for BOD₅; phosphorous and RSP were exceeded.

Throughout 1992, the company proceeded with an environmental study dedicated to resolving wastewater issues. The environmental study has included public participation. In 1993 the company submitted an application for a Certificate of Approval based on the findings of the environmental study. Upgrades will be implemented commencing mid 1993.

Page A-12

In compliance now:
No

CORNWALL CHEMICALS LIMITED
Cornwall

Non-compliance with RSP (4), BOD₅ (12) and phosphorus (1) guidelines.

Findings of the Ministry's 1992 wastewater treatment inspection report and the draft MISA Organic Chemical Sector limits regulation are under evaluation with respect to the treatment technology required to upgrade this facility. Company applied for C. of A. in 1992 to recover more carbon tetrachloride.

Page A-33

In compliance now:
No

COURTAULDS FIBRES CANADA
Cornwall

Exceeded guidelines for its discharges of zinc (12), suspended solids (12), and pH (11).

An order served in 1992 required the company to implement a spill prevention program. As a result of its compliance with the program, spills were substantially reduced.

Page A-34

In compliance now:
The company ceased production in November 1992.

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Southeastern Region

EXCEEDANCES

ACTIONS

DOMTAR INC. CONTAINERBOARD
DIVISION
Trenton

Exceeded Federal BOD₅ (4) limit
and Provincial phosphorous
guideline for twelve months.

Page A-44

An application for an alternate
wastewater treatment system
(evaporator) is presently
before the MOEE for review.

In compliance now:
No

DOMTAR WOOD PRESERVING
Trenton

Exceeded C of A limits for
phenol, RSP, oil and grease and
pentachlorophenol.

Page A-48

Control order issued March 1988
requires the company to install
stormwater treatment system,
stormwater management system
and leachate collection.
Performance evaluation and
optimization reports for the
stormwater treatment system and
leachate collection system were
submitted to the Ministry in
1991. Operational changes at
Treatment Plant in 1991 had
greatly increased compliance at
the north outfall. Ongoing
studies are being conducted to
determine the source of the
contaminates within the "clean"
stormwater drainage areas
discharging via the far north
outfall. Action plan submitted
by company in October 1991 to
address effluent quality non-
compliance. Company submitted
remedial workplan in January
1992; implementation
progressing on schedule.

In compliance now:
No

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Southeastern Region

EXCEEDANCES

ACTIONS

ESSROC CANADA INC. (previously reported as Lake Ontario Cement)

Exceeded MOEE guidelines for suspended solids (5).

In 1992, the company retained the services of an engineering consulting firm to investigate the feasibility of establishing a closed loop, totally recirculated wastewater management system. The company has budgeted funds for the completion of the recirculation system over the period from 1994 through 1996.

Page A-59

In compliance now:
No

GLEN AYR KITTEN MILLS
Lanark

Exceeded guideline for BOD₅ (9) and RSP (1).

Manufacturing discontinued in 1992. Process changes implemented in 1990 failed to resolve problems.

Page A-78

In compliance now:
No production based activities are currently being conducted at this site.

HALEY Industries
Haley

Effluent criteria in Certificate of Approval were exceeded for several parameters in 1991.

Consultants were hired to upgrade the existing wastewater treatment plant to meet Certificate of Approval requirements. Haley submitted an application for a new Certificate of Approval in 1992, which is now under review.

Page A-79

In compliance now:
No

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Southeastern Region

EXCEEDANCES

ACTIONS

HIGHLINE PRODUCE LTD.
- WELLINGTON MUSHROOM FARM
(FORMERLY CAMPBELL'S MUSHROOM
FARM)
Hallowell Twp.

Exceeded MOEE guideline for RSP
annual average limit and
exceeded plant hydraulic
capacity limit.

Page A-81

The company has initiated a
water conservation program
which has significantly reduced
wastewater flows. In 1992, the
average effluent RSP value
returned to conformance with
Ministry of Environment and
Energy policies.

In Compliance Now:
Yes

ICI CANADA INC., CONSOLIDATED
PACKAGING OPERATION (formerly
Stanchem)
Cornwall

Non-compliance with BOD₅
(biochemical oxygen demand)
(5), RSP (suspended solids)
(12), and total phosphorus (9)
guidelines.

Page A-84

The company is assessing
diversion of this effluent to
the municipal sewage system
operated by the City of
Cornwall.

In compliance now:
No

ICI FOREST PRODUCTS
Cornwall

Non-compliance with RSP
(suspended solids) guidelines
for all 12 months.

Page A-86

In May 1993, the company was
issued a Certificate of
Approval to upgrade its
wastewater treatment system.
The upgrade is being undertaken
in order to reduce the
suspended solids associated
with the effluent stream.

In compliance now:
No

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Southeastern Region

EXCEEDANCES

ACTIONS

KRAFT GENERAL FOODS CANADA INC.
Ingleside

Non-compliance with Ministry of the Environment and Energy policy pertaining to total phosphorus (12) concentration in wastewater effluent. The company also failed to comply with its Certificate of Approval limits for RSP (2).

The Township of Osnabruck and the company are proceeding with a joint venture which will ensure that the company will discharge to an upgraded municipal sewage treatment system by 1995. In the interim, the company upgraded its wastewater treatment facility through the addition of an anaerobic pre-treatment system. This upgrade can be credited with the Certificate of Approval compliance achieved in 1991 pertaining to BOD, effluent quality.

Page A-102

In compliance now:
No

LAFARGE CANADA INC.
BATH

Quarry water discharge exceeded suspended solids objective for six months

An engineering consulting firm has produced a storm water control report for the company. The company is currently reviewing the recommendations outlined within the report.

Page A-106

In compliance now:
No

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Southeastern Region

EXCEEDANCES

ACTIONS

NESTLE ENTERPRISES LIMITED
Chesterville

Exceeded Certificate of
Approval limit for BOD₅ (7),
and RSP (7).

Since 1990, the company has been improving the performance of its effluent treatment system, with significant improvement being achieved in 1992. The company has agreed to voluntary compliance actions and will be submitting an application for upgrading amendments to its Certificate Of Approval in 1993.

Page A-117

In compliance now:
No

NITROCHEM INC.
Maitland

Exceeded MOEE Objectives for
ammonia (12) and pH (9) in
several months.

Company is evaluating the impact of the shutdown of ammonia production (November 1992) on effluent quality. Nitrochem is upgrading its water treatment plant pH control system in early 1993. Nitrochem is participating in a Spills Prevention Strategy with planned implementation in 1993 to 1995.

Page A-118

In compliance now:
No

ONTARIO HYDRO
Lennox TGS, South
Fredericksburg (Bath)

Exceeded MOEE guideline for RSP
one month.

The company primarily discharges non-contact cooling water and is in compliance with the MOEE guidelines for the majority of the year.

Page A-134

In compliance now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Southeastern Region

EXCEEDANCES

ACTIONS

**SONOCO Ltd. TRENT VALLEY MILL,
A DIVISION OF PAPERBOARD
INDUSTRIES CORPORATION
Trenton**

Exceeded Certificate of
Approval requirement for RSP
during all 12 months.

The preliminary design specifications for a secondary wastewater treatment plant were completed by the company in 1990. A pilot wastewater treatment plant project was completed during 1991. The company's timetable for upgrading the wastewater treatment facilities anticipates completion of secondary treatment by August 1995. At the time of approval by MOEE will review the RSP loading limit.

Page A-159

**In compliance now:
No**

**STRATHCONA PAPER COMPANY, A
DIVISION OF ROMAN CORPORATION
LIMITED
Camden East**

The company exceeded its Certificate of Approval stipulated effluent BOD₅ limit during a single day in October. The company failed to conform with MOEE policy which restricts phosphorus discharges in wastewater to 1.0 mg/L.

Additional aeration was installed in June 1990 resulting in compliance of BOD₅ limits for winter months of 1991 and all of 1992.

Page A-169

**In compliance now:
No**

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Southwestern Region

EXCEEDANCES

ACTIONS

Campbell Soup Co. Ltd.
St. Mary's

Exceeded limit for RSP, BOD₅
and Phosphorous (PPUT) 3 times
during the year.

WTP upsets during the last
quarter of 1991 appear to have
been resolved by the removal of
a sanitizing agent from the
production process. Ongoing
operational improvements will
result in further effluent
loading reductions. Campbells
is currently undergoing a 4
phase study to improve effluent
quality. Full compliance is
expected in 1993.

Page A-23

In compliance now:
No

Champlain Industries Ltd.
Tara

There were 2 exceedances of the
RSP objective.

Ministry staff are working with
the company to improve
operational control.

Page A-32

In compliance now:
No

General Chemical Canada Ltd.
Amherstberg

Exceedance of the RSP objective
occurred on 12 occasions at
control point 0100.

Sampling and analytical
difficulties in the suspended
solids analyses are being
experienced. Difficulties may
be related to post-
precipitation. General
Chemical is investigating an
alternative analytical
procedure involving analyzing
three daily grab samples and
reporting the daily average.

Page A-76

In compliance now:
No

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Southwestern Region

EXCEEDANCES

ACTIONS

**Ford Motor Company Ltd.
Windsor**

Exceedance of phenolics
objective 12 times.

Page A-73

Phenolic reduction program has resulted in a significant decrease in the phenolics loading discharged. This program is continuing.

**In compliance now:
No**

**Omstead Foods Ltd.
Wheatley**

Exceedance of objectives for
BOD₅ 4 times, NH₃-N Total 2
times, Phosphorous once, and
Suspended Solids once.

Page A-127

On May 9, 1991 a Certificate of Approval was issued for upgrading the company's wastewater treatment plant. Construction should be completed by the Spring 1993. Overall quality is improving.

**In compliance now:
No**

**Sifto Canada Inc.
Goderich**

Exceeded RSP (suspended solids)
objective on 3 occasions over
the year.

Page A-158

The exceedances were the result of operational difficulties, cleaning of an on-site holding pond and a sump pump failure. Lime is no longer used in the brine feed so the frequency of pond cleanings should be reduced. The sump pump that failed has been replaced and a stand-by pump is to be installed.

**In compliance now:
No**

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
Southwestern Region

EXCEEDANCES

ACTIONS

**Suncor Inc., Sunoco Group
Sarnia**

Provincial objective for ammonia exceeded once.

The exceedance of the ammonia objective in March 1991 was due to start-up problems with the new Sour Water Handling and Stripping System. Full compliance with provincial objectives for ammonia is expected in 1992.

Page A-170

**In compliance now:
Yes**

**Valeo Engine Cooling Ltd.
Stratford**

Exceeded effluent objective for suspended solids 3 times.

In March 1990 the company submitted an action plan which included an in-house investigative at-source reduction program. Operational modifications were implemented and continued through 1991. Full yearly compliance is anticipated in 1993. The exceedances of RSP in 1991 may be attributed to an unrepresentative sampling location. Ministry staff are currently working with the company to rectify this situation.

Page A-173

**In compliance now:
No**

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
West Central Region

EXCEEDANCES

ACTIONS

**American Standard, Div. of
Wabco Standard Inc.
Cambridge**

Exceeded Certificate of
Approval concentration for
suspended solids for six
months.

Page A-10

Installation of new clarifier
was completed July, 1991.
Ongoing difficulty with
commissioning resulted in the
non-compliance for suspended
solids.

**In compliance now:
No**

**Atlas Specialty Steel, Div. of
Sammi Atlas Inc.
Welland**

Exceeded Guideline for oil and
grease 1 month (June), and
suspended solids for 2 months
(March and June).

Page A-11

The exceedance in suspended
solids and oil and grease were
due to storm runoff.

Company is investigating
alternative methods of
controlling storm water runoff.

**In compliance now:
Yes**

**B.F. Goodrich
Niagara Falls**

Exceeded daily requirements of
its Certificate of Approval for
pH (8), Ammonia + Ammonium (3)
and flow (3). Exceeded monthly
requirements for suspended
solids (6) and daily
concentrations (8) times.

Page A-14

All exceedances were attributed
to the commissioning of the
vinyl chloride processing
operation. Construction and
commissioning of the new
wastewater treatment system was
completed in 1991. The
effectiveness of this treatment
system is still being
evaluated.

**In compliance now:
No**

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
West Central Region

EXCEEDANCES

ACTIONS

Canadian-Oxy Chemicals Ltd.,
Port Erie

Exceeded guideline for phenol
one month (Feb).

Page A-24

The phenol exceedance is due to contaminated stormwater runoff. The source of contamination has been removed. The stormwater from this dyked area is now recirculated as process water.

In compliance now:
Yes

Cyanamid Canada Inc.,
(Niagara Plant)
Niagara Falls

Exceeded guideline for RSP for
8 months.

Page A-35

RSP exceedances were due to stormwater runoff entering the once-through cooling water discharge. This company shutdown in 1992. All process wastewater discharges have ceased.

In compliance now:
Company shut down.

Cyanamid Canada Inc.,
(Welland Plant)
Niagara Falls

Exceeded Certificate of
Approval monthly limits for
suspended solids for two months
and phosphorus for two months.
Exceeded daily requirements for
pH (3).

Page A-36

The phosphorus, RSP and pH exceedances were due to contaminated storm runoff. Solids were dredged from the equalization pond in the spring of 1992 to maximize storage capacity.

The sources of the intermittent toxicity are being investigated by a consultant.

In compliance now:
No

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
West Central Region

EXCEEDANCES

ACTIONS

Dofasco Inc.
Hamilton

Exceeded phenolics guidelines
for 6 months.

Due to an incorrect testing methodology, the reported data does not accurately represent effluent quality. Actual phenolic concentrations are likely within guidelines, and this is confirmed by 1992 data. Testing methodology corrected in March 1992. Dofasco will also optimize the biological treatment process to improve performance.

Page A-43

In compliance now:
Yes

Domtar Fine Papers,
St. Catharines

Exceeded Pulp and Paper
Committee Guidelines for BOD₅
for 12 months.

The discharge of high strength BOD wastewater was diverted to the municipal sanitary sewer in January 1993. Compliance is expected at that time.

Page A-47

In compliance now:
No

Exolon-ESK Company of Canada
Thorold

Exceeded guideline for oil and
grease for one month.

The oil and grease exceedance was due to hydraulic oil from the electric-arc furnace contaminating the cooling water. The hydraulic lines have been repaired.

Page A-61

In compliance now:
No

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
West Central Region

EXCEEDANCES

ACTIONS

**Ford Motor Company of Canada
Niagara Falls**

Exceeded guidelines for oil and grease for one month.

The oil and grease exceedance was due to oil contamination from the plant's oil autoclaves. Repairs have been made to the lagoon system, which removes the oil. The Glass Plant will be closed in early 1994 and all direct wastewater discharges will be terminated at that time.

Page A-71

In compliance now:
No

**General Motors,
St. Catharines**

Exceeded phenols guidelines, for ten months.

An assessment report on the performance of the Rotating Biological Contactors (RBCs) indicates its efficiency to be about 70% and not the 95% that was achieved with the pilot scale unit. In 1992, the company began the assessment of an additional treatment using an experimental enzyme treatment system. The company announced its closure by the fall of 1994.

Page A-77

In compliance now:
No

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
West Central Region

EXCEEDANCES

ACTIONS

Horizon Poultry Products
(previously reported as J.M.
Schneider Inc.)
Ayr

Exceeded Certificate of
Approval concentration limit
for BOD₅ for three months, NH₃-
N two months, suspended solids
four months, phosphorus four
months, and Kjeldahl nitrogen
two months. Exceeded
Certificate of Approval loading
limit for BOD₅ for two months,
phosphorus two and suspended
solids two months.

The company was requested to
conduct a thorough review of
the plant system to identify
causal factors, increase
sampling frequency and prepare
an action plan to achieve
compliance.

The company contracted a
consultant. Abatement
activities included increased
sampling frequency, changing
the chemicals added to the DAF
unit, reducing wastewater flow,
converting the old clarifier
into a second aeration tank and
discontinuing the use of
phosphate cleaners. Compliance
was achieved in the Fall of
1991.

Page A-82

In compliance now:
YES

INCO Metals Ltd.
Port Colborne

Exceeded pH guideline for one
month.

The pH exceedance was due to
the increased use of lime
during a large storm runoff
event. The lime is used as a
flocculating agent to remove
heavy metals.

The company is presently
investigating other
flocculation agents.

Page A-93

In compliance now:
Yes

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
West Central Region

EXCEEDANCES

ACTIONS

**Kimberly-Clark
St. Catharines**

Exceeded Certificate of
Approval daily limits for
dissolved oxygen three times
and pH eleven times.

The pH exceedances all occurred
in November and December. This
data was considered invalid due
to a defective pH probe. This
probe was replaced and
compliance was achieved in late
December.

All of the dissolved oxygen
exceedances occurred in the
month of September. These were
due to the commissioning of the
wastewater treatment plant.
The commissioning was completed
in November 1991.

Page A-99

In compliance now:
Yes

**Noranda Forest Recycled Paper
Inc.,
Thorold**

Exceeded Certificate of
Approval Limit for BOD₅ (conc.)
37 times, BOD₅ (load.) 11
times, RSP (conc.) 52 times,
and RSP (load.) 21 times. pH
was exceeded one time.

The BOD₅, RSP and pH
exceedances were due to the
commissioning of an upgraded
waste treatment plant. This
commissioning continued through
1991 and into 1992.

Page A-119

In compliance now:
No

**Ontario Hydro Nanticoke TGS
Nanticoke**

Exceeded suspended solids
guideline for 4 months.

Company converted to a dry ash
disposal system in early 1993,
decreasing the flow from the
dry ash lagoon and reducing the
levels of suspended solids.

Page A-135

In compliance now:
No

Appendix B
Review of Action Taken to Address 1991 Non-Compliance
West Central Region

EXCEEDANCES

ACTIONS

Rothsay (formerly ORENCO)
Dundas

Exceeded guideline for
suspended solids for 2 months
and for oil and grease for 3
months.

Page A-152

Suspended solids exceedances
were due to algae growth in the
lagoon. The company is taking
measures to abate both the
suspended solids and oil and
grease exceedances.

In compliance now:
No

Rothsay Rendering Div. of
Maple Leaf Mills Ltd.
Rothsay

Exceeded the Certificate of
Approval weekly requirements
for suspended solids once and
one minor exceedance of H₂S at
detection limit.

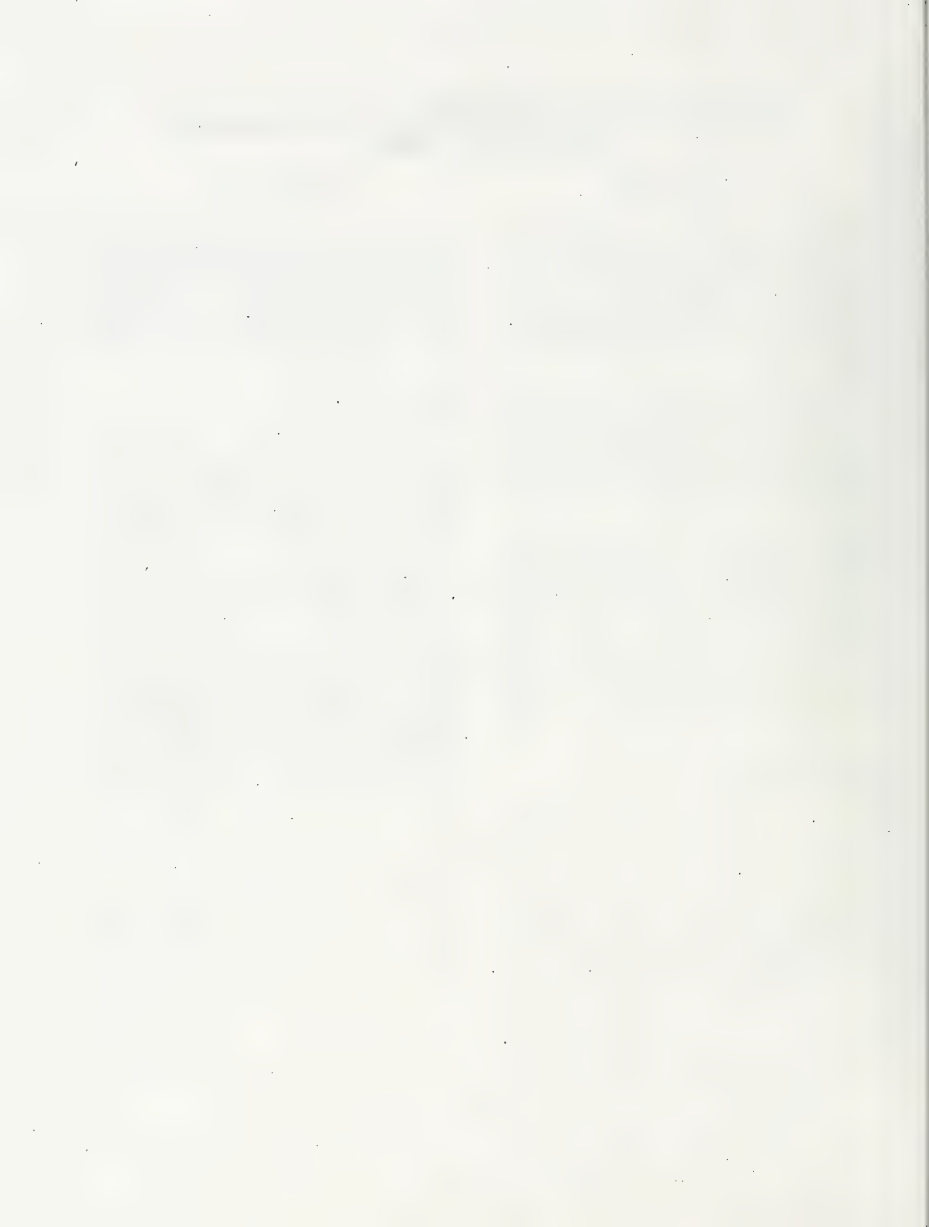
Page A-153

Discharge is on a batch basis
from a treated lagoon and
quality is consistently within
criteria except for minor
isolated incidents.

A minor exceedance of H₂S
occurred during the first
discharge period (January).

Exceedance of suspended solids
occurred in November. The
company shut down the discharge
and chemically treated the
lagoon to reduce the suspended
solids.

In compliance now:
Yes



Appendix C
1991 INDUSTRIAL DIRECT DISCHARGERS
OCCURRENCE REPORT SUMMARY

Company	Occurrence No.	Description	Status
CENTRAL REGION			
Petro-Canada Products Lake Ontario Refinery, Oakville Plant	92-305-01-081	C. of A. violation	Abatement action taken.
	and	Jan. and Feb.	
	92-305-01-082	1991 phenolics	
	93-300-01-205	C. of A. violation	Abatement action taken.
	93-300-01-207	January to June	
	93-300-01-208	1991 suspended solids	
	93-300-01-209		
	93-300-01-210		
	93-300-01-211		
93-300-01-212			
NORTHEASTERN REGION			
Deak Resources (Golden Shield Resources)	05-502-91-0078	C. of A. violations	Company convicted and fined
	Combined with	on Oct. 1, 1992.	\$50,000
	05-502-91-0297		Decision is currently under
	05-502-91-0355		appeal.
	05-502-91-0356		
	05-502-91-0357		
	05-502-91-0358		
	05-502-91-0359		
	05-502-91-0455		
	05-502-91-0456		
	05-502-91-0457		
	05-502-91-0954		
	05-502-91-1015		
	05-502-91-1103		
	05-502-91-1104		

Appendix C ..continued
1991 INDUSTRIAL DIRECT DISCHARGERS
OCCURRENCE REPORT SUMMARY

Company	Occurrence No.	Description	Status
NORTHEAST REGION....continued			
INCO Limited	05-501-91-0999 Combined with 05-501-91-1000 05-501-91-1003 05-501-91-1098 05-501-91-1101 05-501-91-1102	C. of A. Violation	Investigation concluded. Abatement action recommended.
Eastmaque Gold Mines Ltd.	05-502-91-0687	C. of A. Violation	Investigation concluded. Abatement action recommended.
Eastmaque Gold Mines Ltd.	05-502-91-0901	C. of A. Violation	Investigation concluded. Abatement action recommended.
Lac Minerals Ltd.	05-502-91-0684	C. of A. Violation	Investigation concluded. Abatement action recommended.
St. Andrew Goldfields	05-502-91-0684	C. of A. Violation	Investigation concluded. Abatement action recommended.
NORTHWESTERN REGION			
Abitibi-Price Inc. Fort William Div.	06-601-91-0145	C.O. Violation July 15, 1991	Investigation concluded. Abatement action Recommended.
Abitibi-Price Inc. Thunder Bay Div.	06-601-89-0121	C.O. Violation	Combined with below 06-601-91-0065
	06-601-91-0065	C. of A. violation March 15, 1991	Company convicted of 1 charge March 11, 1992 and fined \$18,000.

Appendix C ...continued
1991 INDUSTRIAL DIRECT DISCHARGERS
OCCURRENCE REPORT SUMMARY

Company	Occurrence No.	Description	Status
NORTHWESTERN REGION ...continued			
Abitibi-Price Inc. Thunder Bay Div	06-601-91-0082	C of A violation	Investigation concluded. Abatement action recommended. Mill closed August 1991.
Boise Cascade Fort Francis	06-602-90-0206	C.O. Violation August 14, 1991	Investigation concluded. Abatement action recommended.
	06-602-91-0197	C.O. Violation Sept. 16, 1991	Investigation concluded. Abatement action recommended.
Hemlo Gold Mines Marathon	06-601-91-0096	C. of A. violation Sept. 16, 1991	Investigation concluded. Abatement action recommended.
Noranda Geco Div. Manitouwadge	06-601-91-0225	C. of A. violation Nov. 14, 1991	Investigation concluded. Abatement action recommended.
SOUTHEASTERN REGION			
Nestle Enterprises Ltd.	04-403-91-0251	C of A Violation	Investigation concluded. Abatement action recommended.
Domtar Wood Preserving Division, Trenton	04-411-90-0844	C of A Violation	Company convicted Oct. 15, 1992 and fined \$28,000.00
	Combined with	June - Aug. 1991	
	04-411-91-0399		
	04-411-91-0427		
	04-411-91-0494		
Domtar Wood Preserving Division, Trenton	04-411-91-0675		Investigation concluded. Abatement action recommended.
	04-411-91-0073	C.O. Violation	
	Combined with		
	04-411-92-0004		
	04-411-92-0005		
	04-411-92-0006		
	04-411-92-0158		

Appendix C...continued
1991 INDUSTRIAL DIRECT DISCHARGERS
OCCURRENCE REPORT SUMMARY

Company	Occurrence No.	Description	Status
SOUTHEASTERN REGION ...continued			
Haley Industries	04-402-92-0025	C. of A. violation Aug. to Oct. 1991	Investigation concluded. Abatement action recommended.
Nestle Enterprises Ltd.	04-403-91-0252	C. of A. violation BOD and suspended solids guidelines	Investigation concluded. Recommended C. of A. be revised.
Kraft General	04-403-91-0121	C. of A. violation Dec. 1990 and Jan. to Feb. 1991 suspended solids	Investigation concluded. Abatement action recommended
Ault Foods	04-403-91-0251	C. of A. violation	Investigation concluded. Abatement action recommended.

SOUTHWESTERN REGION

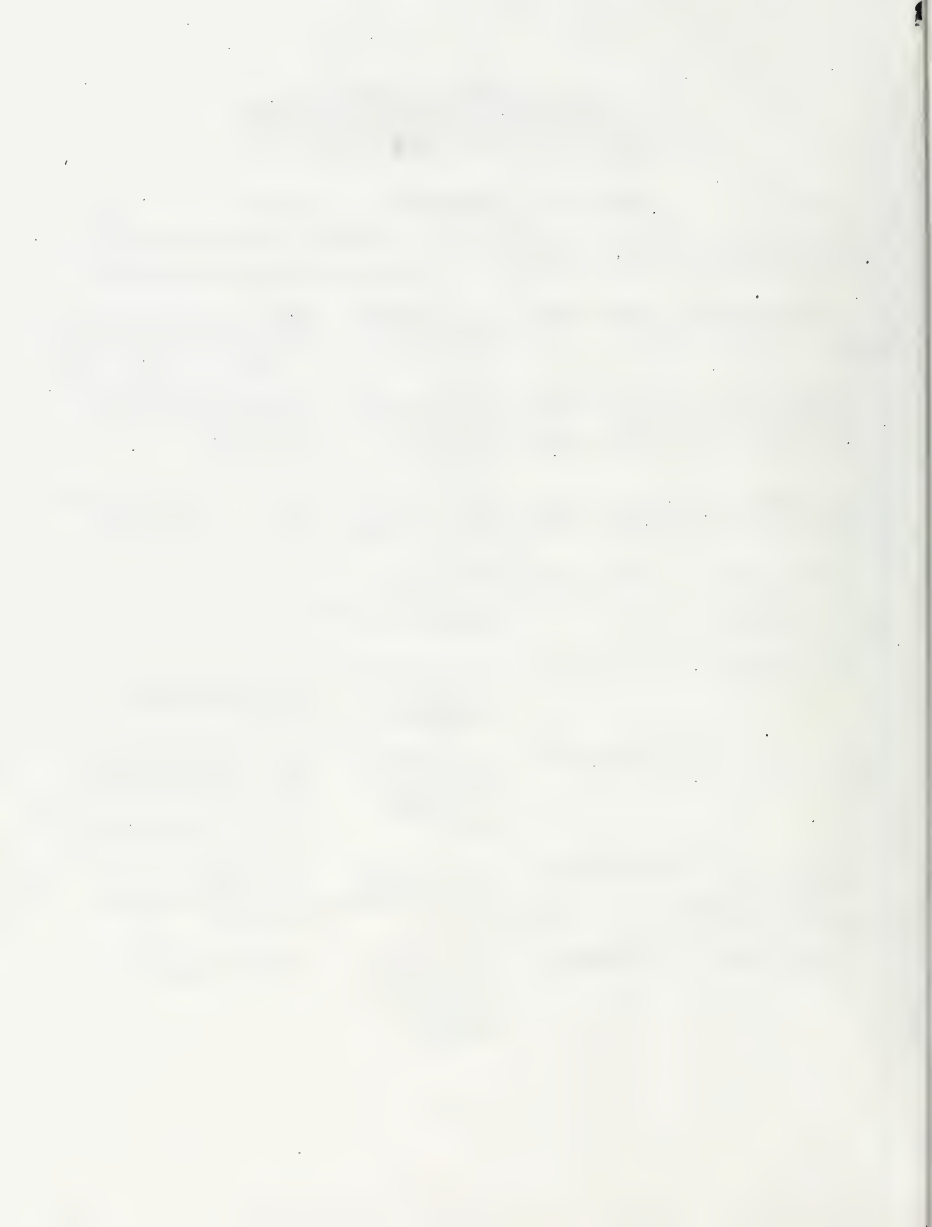
General Chemical Canada Ltd.	01-102-91-0054	C. of A. violation	Investigation concluded. Abatement action recommended.
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WEST-CENTRAL REGION

J.M. Schneider Inc.	02-202-90-0373	C of A violation May 1990 ammonia and nitrogen	Abatement action taken. Company installed an additional clarifier in December 1990.
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Appendix C ...continued
1991 INDUSTRIAL DIRECT DISCHARGERS
OCCURRENCE REPORT SUMMARY

Company	Occurrence No.	Description	Status
WEST-CENTRAL REGION ...continued			
J.M. Schneider Inc.	02-202-90-0469	C of A violation June 1990 BOD and ammonia	Abatement action taken. Company installed an additional clarifier in December 1990.
Horizon Poultry Products (previous J.M. Schieder Inc.)	02-202-91-0312 and 02-202-91-1058	C. of A. violation January 1991 BOD, ammonia and nitrogen	Abatement action taken. Engineering consultant hired by the company.
	02-202-91-1156	C. of A. violation July 1991 phosphorus	Abatement action taken. Company now in compliance
American Standard	02-202-91-0745	C. of A. violation January 1991 suspended solids	Abatement action taken.
American Standard	02-202-91-1157	C. of A. violation May and June 1991 suspended solids	Abatement action taken. New clarifier installed July 1991
	02-202-91-1373	C. of A. violation July and August 1991 suspended solids.	Abatement action taken. New clarifier not working effectively.
Rothsay, The Rendering Division of Maple Leaf Mills	02-202-91-0612	C. of A. violation January 1991 H ₂ S	Abatement action taken. Analytical problems led to violation.
Noranda Forest	02-203-92-0045	C. of A. violation September 1991 failure of toxicity requirement.	Abatement action taken.



Appendix D
ONTARIO MINISTRY OF ENVIRONMENT AND ENERGY
Addresses and Telephone Numbers

Regional Offices

Central Region
7 Overlea Blvd., 4th Floor,
Toronto, Ontario
M4H 1A8
(416) 424-3000

Northwestern Region
P.O. Box 5000, 435 James Street S.,
Thunder Bay, Ontario
P7C 5G6
(807) 475-1205

Southwestern Region
985 Adelaide Street South,
London, Ontario
N6E 1V3
(519) 661-2200

Northeastern Region
199 Larch Street,
Sudbury, Ontario
P5E 5P9
(705) 675-4501

Southeastern Region
P.O. Box 820, 133 Dalton Street,
Kingston, Ontario
K7L 4X6
(613) 549-4000

West Central Region
119 King Street West, 12th Floor,
Hamilton, Ontario
L8N 3Z9
(416) 521-7640

District Offices

Central Region

Halton-Peel District Office
1235 Trafalgar Road.,
Oakville, Ontario
L6H 3P1
(416) 822-2566

Barrie District Office
12 Fairview Road,
Barrie, Ontario
L4N 4P3
(705) 726-1730

Peterborough District Office
139 George Street North,
Peterborough, Ontario
K9J 3G6
(705) 743-2972

Muskoka-Haliburton District Office
483 Bethune Drive,
Gravenhurst, Ontario
P0C 1G0
(705) 687-6647

Appendix D ...continued
ONTARIO MINISTRY OF ENVIRONMENT AND ENERGY
Addresses and Telephone Numbers

District Offices ...continued

Central Region ...continued

Toronto East District Office
7 Overlea Blvd.,
Toronto, Ontario
M4H 1A8
(416) 467-3013

Toronto West District Office
7 Overlea Blvd.,
Toronto, Ontario
M4H 1A8
(416) 467-3007

York-Durham District Office
7 Overlea Blvd.,
Toronto, Ontario
M4H 1A8
(416) 467-3009

Northeastern Region

North Bay District Office
Northgate Plaza,
1500 Fisher Street, Suite 109,
North Bay, Ontario
PIB 2H3
(705) 476-1001

Sault Ste. Marie District Office
445 Albert Street East,
Sault Ste. Marie, Ontario
P6A 2J9
(705) 949-4640

Sudbury District Office
199 Larch Street, 11th Floor,
Sudbury, Ontario
P5E 5P9
(705) 675-4501

Timmins District Office
83 Algonquin Blvd. West,
Timmins, Ontario
P4N 2R4
(705) 268-3222

Parry Sound Sub-Office
74 Church Street,
Parry Sound, Ontario
P2A 1Z1
(705) 746-2139

Appendix D ...continued
ONTARIO MINISTRY OF ENVIRONMENT AND ENERGY
Addresses and Telephone Numbers

District Offices ...continued

Northwestern Region

Thunder Bay District Office
P.O. Box 5000, 435 James Street S.,
Thunder Bay, Ontario
P7C 5G6
(807) 475-1205

Kenora District Office
808 Robertson Street,
Kenora, Ontario
P9N 1X9
(807) 468-2718

Southeastern Region

Cornwall District Office
285 Amelia Street,
Cornwall, Ontario
K8H 3P3
(613) 933-7402

Kingston District Office
P.O. Box 820, 133 Dalton Avenue,
Kingston, Ontario
K7L 4X6
(613) 549-4000

Ottawa District Office
2435 Holly Lane, 2nd Floor,
Ottawa, Ontario
K1V 7P1
(613) 521-3450

Belleville Sub-Office
Belleville Mall, 470 Dundas St. E.,
Belleville, Ontario
K8N 1G1
(613) 962-9208

Pembroke Sub-Office
1000 Mackay Street,
Pembroke, Ontario
K8B 1A3
(613) 732-3643

Appendix D ...continued
ONTARIO MINISTRY OF ENVIRONMENT AND ENERGY
Addresses and Telephone Numbers

District Offices ...continued

Southwestern Region

Sarnia District Office
265 North Front Street, Suite 109,
Sarnia, Ontario
N7T 7X1
(519) 336-4030

Windsor District Office
250 Windsor Avenue, 6th Floor,
Windsor, Ontario
N9A 6V9
(519) 254-2546

Chatham Sub-Office
c/o Ministry of Agriculture and Food
P.O. Box 726, 435 Grand Ave. W.,
Chatham, Ontario
N7M 5L1
(519) 354-9434

Owen Sound District Office
1180 - 20th Street,
Owen Sound, Ontario
N4K 6H6
(519) 371-2901

London District Office
985 Adelaide Street South,
London, Ontario
N6E 1V3
(519) 661-2200

Clinton Sub-Office
c/o Ministry of Agriculture and Food
P.O. Box 688,
Clinton, Ontario
N0M 1L0

West Central Region

Cambridge District Office
320 Pinebush Rd.,
Cambridge, Ontario
P.O. Box 219
N1R 5T8
(519) 622-8150

Hamilton District Office
P.O. Box 2112,
119 King Street W., 9th Floor,
Hamilton, Ontario
L8N 3Z9
(416) 521-7650

Welland District Office
637 - 641 Niagara North,
Welland, Ontario
L3C 1L9
(416) 384-9845

